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# Cancer-Related Insomnia

# Insomnies chez le patient cancéreux : évaluation de l'acupuncture

## 1. Systematic Reviews and Meta-Analysis

### 1.1. Generic acupuncture

#### 1.1.1. Aemmi 2026 (breast cancer)

Aemmi SZ, Mohammadi-Pirouz Z, Moradi M. Non-pharmacological sleep management in breast cancer survivors: Evidence from a systematic review and meta-analysis of RCTs. Prev Med Rep. 2026;67:103511. https://doi.org/10.1016/j.pmedr.2026.103511

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| **Objective** | Breast cancer is the most commonly diagnosed cancer among women worldwide. Although survival rates have improved through advances in screening and treatment, many survivors continue to experience chronic sleep disturbances that impair quality of life. |
| **Methods** | Following PRISMA guidelines, systematic searches were conducted in PubMed, EMBASE, Scopus, and Web of Science from inception to December 2024. Eighty-nine eligible studies were identified, and 73 met the predefined criteria for inclusion in the meta-analysis. |
| **Results** | Psychosocial interventions lead to substantial improvements in sleep quality (SMD = -1.12; 95% CI: -1.57, -0.68), while physical therapies, such as **acupuncture**, demonstrate moderate benefits (SMD = -0.86; 95% CI: -1.32, -0.41). Physical activity interventions showed minimal effects (SMD = -0.20; 95% CI: -0.39, 0.00). Additionally, psychosocial interventions significantly reduced insomnia symptoms (SMD = -0.82; 95% CI: -1.09, -0.55). |
| **Conclusion** | Nonpharmacological interventions, particularly psychosocial strategies, may effectively improve sleep quality and reduce insomnia among breast cancer survivors, supporting the integration of individualized supportive care plans within comprehensive survivorship and long-term follow-up programs. |

#### 1.1.2. Zhang 2026 (breast cancer)

Zhang H, Ren K, Wang S. Efficacy and safety of acupuncture for breast cancer-related insomnia: a systematic review and meta-analysis. BMJ Support Palliat Care. 2026;spcare-2025-006052. https://doi.org/10.1136/spcare-2025-006052

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| **Background** | Breast cancer-related insomnia (BCRI) is a common and burdensome sequela. Acupuncture is frequently used, but robust evidence is limited, and previous systematic reviews included few trials yielding imprecise estimates. |

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| **Methods** | We systematically searched eight databases for randomized controlled trials (RCTs) up to July 1, 2025. RCTs comparing acupuncture with any control for BCRI were eligible. Methodological quality was assessed using the Cochrane Risk of Bias tool (RoB 2.0) and the modified Jadad scale. Meta-analyses employed a random-effects model. Subgroup analyses explored heterogeneity sources, and the GRADE framework rated evidence certainty. |
| **Results** | **Twenty-seven RCTs (n=2,025)** were included. Acupuncture significantly reduced Pittsburgh Sleep Quality Index (PSQI) scores (MD= -2.74, 95% CI [-3.92, -1.55], P<0.00001) and increased the overall efficacy rate (RR=1.51, 95% CI [1.27, 1.81], P<0.00001) compared to control, but did not significantly improve Insomnia Severity Index (ISI) scores. Subgroup analyses identified control intervention type and treatment frequency as significant sources of heterogeneity. Adverse events were infrequent and typically mild. GRADE assessments rated the certainty of evidence as low or very low, primarily due to risk of bias and substantial heterogeneity. |
| **Conclusion** | Current evidence suggests acupuncture may improve sleep in patients with BCRI, with effects moderated by comparator type and treatment frequency. However, conclusions are limited by methodological weaknesses and heterogeneity. Future rigorous RCTs using validated sham controls, standardized protocols, and objective outcomes are needed to confirm efficacy and guide practice. |

#### 1.1.3. Gao 2025 (breast cancer)

Gao L, Sun Y, Luo T, Chen H, Huang S, Zhu L, Ye M. Acupuncture for systemic therapy-associated insomnia in patients with breast cancer: a systematic review and meta-analysis of randomized controlled trials. Front Oncol. 2025 May 8;15:1494929. https://doi.org/10.3389/fonc.2025.1494929

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| **Backgound** | Systemic therapy-associated insomnia is highly prevalent among patients with breast cancer. However, no meta-analysis has explored the efficacy of acupuncture for Systemic therapy-associated insomnia among patients with cancer. |
| **Methods** | According to the PRISMA Statement, randomized controlled trials (RCTs) through April 2024 were identified and extracted from PubMed, Embase, and the Cochrane CENTRAL Register of Controlled Trials. The quality of the RCTs was assessed using the Cochrane Systematic Review Handbook 5.1 and its recommended risk-of-bias assessment tool. Two independent investigators screened and extracted the data and performed statistical analysis using RevMan5.3. |
| **Results** | Of the total 411 studies identified, **4 RCTs** were analyzed. The meta-analysis revealed that acupuncture significantly improved the total sleep time and sleep efficiency relative to wait-list control or sham EA among patients with breast cancer experiencing insomnia after systemic therapy (mean difference [MD] 29.86, 95% confidence interval [CI] 16.20-43.51, P < 0.0001 and MD 4.56, 95% CI 1.84-7.29, P = 0.001), reduced the pittsburgh sleep quality index (PSQI) relative to wait-list control or sham EA with an MD of -0.87 (95% CI -1.60 to -0.15, P = 0.02, I2 = 25%) in 4 weeks and an MD of -0.82 (95% CI -1.60 to -0.04, P = 0.04, I2 = 12%) in 8 weeks, and reduced the hospital anxiety and depression scale (HADS)-anxiety both in 4 weeks with an MD of -0.85 (95% CI -1.42 to -0.27, P = 0.004, I2 = 0%) and in 8 weeks with an MD of -0.94 (95% CI -1.56 to -0.32, P = 0.003, I2 = 0%. However, no significant differences in insomnia severity index (MD -2.15, 95% CI -5.07 to 0.78, P = 0.15 and MD -1.48, 95% CI -3.91 to 0.94, P = 0.23), and HADS-depression (MD -0.67, 95% CI -2.32 to 0.99, P = 0.43 and MD -0.63, 95% CI -2.39 to 1.12, P = 0.48) in 4 and 8 weeks were observed between the acupuncture group and the wait-list control or sham EA group. |
| **Conclusion** | Acupuncture has a great potential to be used in the management of systemic therapy-associated insomnia in patients with breast cancer. More studies with rigorous designs and larger sample sizes are warranted to verify the efficacy and safety of acupuncture for insomnia among patients with breast cancer. |

### 1.1.4. Khosravaninezhad 2025

Khosravaninezhad Y, Moshfeghinia R, Liaghat L, Ghazipoor H, Kaheni Y, Javidan A, Mirzaee Y, Azadmehr A, Hashemi Y, Pasalar M. Effect of acupressure and acupuncture on sleep quality in cancer patients with insomnia: A systematic review and meta-analysis. Explore (NY). 2025 Jul-Aug;21(4):103192. https://doi.org/10.1016/j.explore.2025.103192

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| **Introduction** | Cancer patients frequently experience insomnia, adversely affecting their quality of life. This study aimed to systematically review and analyse the effectiveness and safety of acupressure and acupuncture in improving sleep quality among cancer patients suffering from insomnia, providing evidence for non-pharmacological treatment options. |
| **Methods** | Several digital databases (Scopus, PubMed, Embase, Web of Science, Medline, Cochrane library, PsycINFO, CINAHL complete, and Google Scholar) were examined for English-language records. Inclusion criteria involved randomized controlled trials assessing the impact of acupressure or acupuncture on cancer patients with insomnia. The Cochrane Collaboration's instrument was employed to evaluate the quality of the encompassed studies. For meta-analysis, a model that accounts for variability among studies was favoured, and statistical analysis was conducted using Stata software version 17. |
| **Results** | This review analysed **13 randomized controlled trials** involving **806 cancer patients**. The analysis indicated that sleep quality didn't differ significantly between treatment and control groups. However, sleep efficacy was significantly higher in the treatment group (SMD [95 % CI] = 0.43 [0.21, 0.65]). Additionally, total sleep time showed a significantly higher extent in the treatment group (SMD [95 % CI] = 0.58 [0.24, 0.92]). No significant differences were found for depression or sleep onset latency between groups, while anxiety levels were lower in the treatment group (SMD [95 % CI] = -0.52 [-0.90, -0.15]). |
| **Conclusion** | The review suggests that acupressure and acupuncture enhance sleep quality in cancer patients suffering from insomnia, showing notable benefits during follow-up, especially among Asian participants. |

### 1.1.5. Ma 2025

Ma Q, Liu C, Zhao G, Guo S, Li H, Zhang B, Li B, Cai Z. Acupuncture for insomnia in people with cancer. Cochrane Database Syst Rev. 2025 Dec 5;12:CD015177. https://doi.org/10.1002/14651858.CD015177.pub2

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| **Background** | Rationale: Insomnia is a common issue affecting people with cancer. Although acupuncture is widely used as a treatment option for insomnia, its effects on cancer patients require a rigorous and up-to-date evaluation. |

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| **Methods** | Objectives: To evaluate the benefits and harms of acupuncture for insomnia in people with cancer. Search methods: We searched CENTRAL, MEDLINE, Embase, PsycINFO, and five other databases or trial registries in January 2024. Eligibility criteria: We included randomised controlled trials (RCTs) with a minimum duration of four weeks that evaluated acupuncture (defined as needle insertion at specific acupoints) for treating insomnia in patients with cancer. Outcomes: Our outcomes were insomnia severity measured by the Insomnia Severity Index (ISI), sleep quality measured by the Pittsburgh Sleep Quality Index (PSQI), adverse events, and sleep diary outcomes including sleep onset latency (SOL), wake after sleep onset (WASO), total sleep time (TST), and sleep efficiency (SE). Risk of bias: We assessed the risk of bias using the RoB 2 tool. Synthesis methods: We performed random-effects meta-analysis to calculate risk ratios (RR) for dichotomous outcomes and mean differences (MD) for continuous outcomes, with 95% confidence intervals (CIs). We assessed the certainty of evidence with GRADE and interpreted findings for continuous outcomes against minimally important differences (MIDs). |

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| **Results** | Included studies: We included **five studies with 402 participants**. The participants were predominantly females with breast cancer, and most were people following primary cancer treatment. Synthesis of results: We identified three comparisons with outcomes assessed at the end of the interventions. We rated the certainty of the evidence as very low-to-moderate, mainly due to risk of bias and the imprecision of effect estimates from the small studies. Acupuncture versus sham acupuncture We are very uncertain about all results due to very low-certainty evidence. Compared to sham acupuncture, acupuncture may have little to no effect on post-intervention ISI scores (MD -3.17, 95% CI -10.39 to 4.05; MID -4.7 points; 2 studies, 152 participants; very low-certainty evidence) and PSQI scores (MD -1.16, 95% CI -3.53 to 1.22; MID -3 points; 2 studies, 152 participants; very low-certainty evidence). Acupuncture may increase the risk of adverse events (RR 2.60, 95% CI 0.98 to 6.90; 1 study, 138 participants; very low-certainty evidence), but this result is very uncertain. Regarding sleep diary outcomes, acupuncture compared with sham acupuncture may improve post-intervention SOL (MD -10.02 min, 95% CI -19.09 to -0.94; MID 20 minutes; 2 studies, 152 participants; very low-certainty evidence) and SE (MD 4.90%, 95% CI 1.98 to 7.82; MID 10%; 2 studies, 152 participants; very low-certainty evidence) very slightly. It may have a large effect on TST (MD 45.94 min, 95% CI -0.93 to 92.80; MID 15 minutes; 2 studies; 152 participants; very low-certainty evidence), but this result is very uncertain. Data on WASO were unavailable. No outcome both exceeded its MID and was statistically significant. Acupuncture versus inactive control We are very uncertain about all results due to very low-certainty evidence. Compared to an inactive control, acupuncture may reduce post-intervention ISI scores (MD -3.88, 95% CI -7.25 to -0.52; MID -4.7 points; 2 studies, 46 participants; very low-certainty evidence) and PSQI scores (-2.20, 95% CI -3.35 to -1.04; MID -3 points; 3 studies, 98 participants; very low-certainty evidence) slightly, but may increase the risk of adverse events (RR 15.49, 95% CI 2.12 to 113.10; 2 studies, 76 participants; very low-certainty evidence). With respect to sleep diary outcomes, acupuncture may slightly improve post-intervention SOL (MD -15.61 min, 95% CI -29.23 to -1.99; MID 20 minutes; 2 studies, 46 participants; very low-certainty evidence), TST (MD 34.61 min, 95% CI 12.54 to 56.69; MID 15 minutes; 2 studies, 46 participants; very low-certainty evidence) and SE slightly (MD 5.65, 95% CI 0.99 to 10.32; MID 10%; 2 studies, 46 participants; very low-certainty evidence). However, it may result in little to no difference in post-intervention WASO (MD 5.70 min, 95% CI -17.25 to 28.65; 1 study, 30 participants; very low-certainty evidence). Only the TST improvement surpassed the MID. Acupuncture versus cognitive behavioural therapy for insomnia (CBT-I) Compared to CBT-I, acupuncture probably results in slightly higher (worse) post-intervention ISI scores (MD 2.60, 95% CI 1.13 to 4.07; 1 study, 160 participants; moderate-certainty evidence) and PSQI scores (MD 1.51, 95% CI 0.51 to 2.51; 1 study, 160 participants; moderate-certainty evidence). However, it may have little to no effect on adverse events (RR 1.68, 95% CI 0.59 to 4.79; 1 study; 160 participants; low-certainty evidence). Regarding sleep diary outcomes, acupuncture compared with CBT-I probably slightly worsens post-intervention SOL (MD 16.33 min, 95% CI 8.22 to 24.44; MID 10 minutes; 1 study, 160 participants; moderate-certainty evidence) and SE (MD -5.00%, 95% CI -8.48 to -1.52; MID 5%; 1 study, 160 participants; moderate-certainty evidence) but probably increases TST (MD 26.80 min, 95% CI 3.87 to 49.73; MID 15 minutes; 1 study, 160 participants; moderate-certainty evidence). It probably has little to no effect on WASO (MD 8.94 min, 95% CI -1.47 to 19.35; MID 15 minutes; 1 study, 160 participants; moderate-certainty evidence). The effects on SOL, TST, and SE reached the MIDs. |

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| **Conclusion** | Authors' conclusions: Based on very low-certainty evidence, acupuncture may have little to no effect on insomnia severity or sleep quality compared to sham acupuncture, though it may offer slight improvements in some sleep diary metrics. In contrast, when compared to an inactive control, acupuncture may alleviate insomnia severity and improve sleep quality and most sleep diary metrics, but adverse events should be taken into consideration. These findings are derived primarily from studies of female adults with breast cancer. Based on low- to moderate-certainty evidence, when compared with CBT-I, acupuncture is likely less effective at reducing insomnia severity, improving sleep quality, SOL and SE. Conversely, acupuncture probably improves TST. Larger, methodologically robust, long-term trials that include diverse cancer populations are required to provide definitive conclusions. |
| **Funding** | Funding: This work was funded by the Postdoctor Research Fund of West China Hospital, Sichuan University (2025HXBH063) and the Fundamental Research Fund of China Academy of Chinese Medical Sciences (No. ZZ17-XRZ-113). |

### 1.1.6. Yang 2025 (breast cancer)

Yang Y, Wang H, Chen ZZ, Teng QR. Effects of acupuncture on improving sleep quality and the risk of emotional maladjustment of breast cancer patients: a systematic review and meta-analysis. Front Oncol. 2025 Jun 26;15:1617818. https://doi.org/10.3389/fonc.2025.1617818

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| **Backgound** | Acupuncture is highly controversial in enhancing the quality of sleep and the risk of emotional maladjustment in breast cancer patients. Through a comprehensive meta-analytic approach, this study intends to investigate the effects of acupuncture on enhancing sleep quality and the risk of emotional maladjustment in patients diagnosed with breast carcinoma. |
| **Methods** | Search tactics aligned with Cochrane Collaboration recommendations. Systematic electronic searches were conducted in April 2025 across several data storage, including PubMed, Embase, Web of Science, the Cochrane Library, and Scopus. The reference lists of review essay were manually searched to refine potentially eligible studies. A pair of researchers independently performed a comprehensive literature review, conducted data extraction, and assessed the risk of bias. Outcome analysis included the quality of sleep and the risk of emotional maladjustment. For continuous measures, the pooled weighted mean difference (MD) and 95% confidence interval will be estimated. The meta-analysis was conducted using the Review Manager 5.3 and Stata 16.0 statistical software platforms. |
| **Result** | A total of **11 studies involving 1116 participants** were included. Statistically significant differences were found between acupuncture and control group in Pittsburgh Sleep Quality Index (PSQI) (MD = -1.38, 95%CI = -2.45 to -0.31), Insomnia Severity Index (ISI) (MD = -1.11, 95%CI = -3.68 to 1.45), Brief Fatigue Scale (BFI) score (MD = -2.30, 95%CI = -5.62 to -1.03). Acupuncture has been shown to Boost sleep quality and reducing the risk of emotional maladjustment. Specifically, it is manifested in: Hospital Anxiety and Depression Scale (HADS-A) (MD = -1.24, 95%CI = -2.41 to -0.35) and Hospital Anxiety and Depression Scale (HADS-D) (MD = -1.18, 95%CI = -2.15 to -0.20). |
| **Conclusion** | In comparison to other standard treatment modalities, acupuncture exhibits a notable distinction in boosting the sleep quality and the risk of emotional maladjustment of breast cancer patients. However, Clinicians should exercise caution when applying these results, as the available evidence suffers from methodological biases and quality limitations. |

### 1.1.7. Liu 2024

Liu P, Li L, Xu D, Xin S, Hu N, Li C. Acupuncture for cancer-related insomnia: systematic review and

meta-analysis of randomised controlled trials. BMJ Support Palliat Care. 2024 Nov 20;14(4):378-391. https://doi.org/10.1136/spcare-2024-005051

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| **Backgound** | Acupuncture has been demonstrated to be a safe and effective treatment for insomnia in patients without cancer. A lack of evidence, however, supports its application in the treatment of cancer-related insomnia (CRI). |
| **Objective** | To conduct a systematic review and meta-analysis to assess the efficacy as well as safety of acupuncture for alleviating insomnia in patients with cancer. |
| **Methods** | A systematic search was conducted using four electronic databases (PubMed, EMBASE, Scopus and the Cochrane Library) to select publications published in peer-reviewed journals written in English. The OR was calculated, along with their 95% CIs. We assessed heterogeneity using Cochrane Q, I2 statistics and the appropriate p value. The analysis used RevMan V.5.3. |
| **Findings** | The present meta-analysis comprised **561 individuals from 10 randomised controlled trials (RCTs)** across age cohorts. Acupuncture intervention improves Pittsburgh Sleep Quality Index (PSQI) scores and CRI more than control, with a pooled OR of 1.66 (95% CI 1.12 to 2.46), OR of 5.90 (95% CI 2.64 to 13.23) for electroacupuncture, OR of 2.30 (95% CI 1.48 to 3.58) for auricular-acupuncture and 2.72. Acupuncture improved the Insomnia Severity Index (ISI) and CRI more than control approaches, with ORs of 1.31 (95% CI 0.69 to 2.48), 5.29 (95% CI 2.18 to 12.84), 3.17 (95% CI 1.35 to 7.44) and 1.64 (95% CI 1.00 to 2.68). |
| **Conclusion** | The change in PSQI and ISI scores showed that acupuncture moderately improved insomnia in patients with cancer. Acupuncture is safe and effective, enabling subsequent clinical treatments. |

### 1.1.8. Weng 2024 (breast cancer)

Weng Y, Ren X, Zu Z, Xiao L, Chen M. Efficacy and safety of acupuncture for the treatment of insomnia in breast cancer patients: A systematic review and meta-analysis. Complement Ther Med. 2024 Nov;86:103087. https://doi.org/10.1016/j.ctim.2024.103087

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| **Backgound** | Breast cancer-related insomnia is one of the most common symptoms in patients with breast cancer, and acupuncture has been increasingly used in the treatment. However, there has been no meta-analysis that specifically explores the efficacy and safety of acupuncture in treating insomnia related to breast cancer. |
| **Objective** | The aim of this review was to systematically analyze the existing literature through a meta-analysis to evaluate the effectiveness and safety of acupuncture for breast cancer-related insomnia. |
| **Methods** | Six medical databases were comprehensively searched for previous randomized controlled trials (RCTs) up to April 2024. The Pittsburgh Sleep Quality Index (PSQI) score was the primary outcome. The secondary outcomes include the Insomnia Severity Index (ISI), Sleep Onset Latency (SOL), Wake After Sleep Onset (WASO), Total Sleep Time (TST), and Sleep Efficiency (SE), and the later four outcomes were measured by Actiwatch and sleep diary, respectively. |

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| **Results** | A total of **seven articles with 434 participants** were included. The meta-analysis revealed that acupuncture produced a significant improvement in the total PSQI score (MD 95 %CI = -2.16[-2.88, - 1.45], P < 0.001), but had no statistical significance on ISI scores compared with controls (MD 95 %CI = -1.53[-3.97, 0.91], P = 0.22). From the Actiwatch, there was no substantial disparity observed in the enhancement of Sleep Onset Latency (SOL) (MD 95 %CI = -6.40[-13.19, 0.39], P = 0.06), Wake After Sleep Onset (WASO) (MD 95 %CI = -1.45[-7.09, 4.20], P = 0.62), or Total Sleep Time (TST) (MD 95 %CI = 3.54 [-4.71, 11.79], P = 0.40) between the experimental group and the control group. However, a significant distinction was observed in Sleep Efficiency (SE) improvement (MD 95 %CI = 2.43 [0.14, 4.72], P = 0.04). From the sleep diary, there was a significant difference in the amelioration of SOL (MD 95 %CI = -9.15[-16.48, -1.81], P = 0.01), TST (MD 95 %CI = 29.92 [16.74, 43.10], P < 0.001), and SE (MD 95 %CI = 4.57 [1.92, 7.23], P = 0.0007) between the experimental group and the control group. However, no significant divergence was observed in the improvement of WASO (MD 95 %CI = 4.53[-4.81, 13.87], P = 0.34). All reported acupuncture-related adverse events were mild in severity. |
| **Conclusions** | Acupuncture can partially alleviate insomnia symptoms in breast cancer patients. Moreover, acupuncture is safe and may serve as a dependable alternative therapy in clinical settings. Owing to the limited number of studies included, potential biases of heterogeneous interventions, and methodological weaknesses of long-term follow-up, more high-quality RCTs with large sample sizes should be conducted to evaluate acupuncture treatment. |

### 1.1.9. Fangfang 2023

Fangfang MA, Hewei Z, Bingxue LI, Peiyu C, Mingwei YU, Xiaomin W. Acupuncture and moxibustion for malignant tumor patients with psychological symptoms of insomnia, anxiety and depression: a systematic review and Meta-analysis. J Tradit Chin Med. 2023 Jun;43(3):441-456. https://doi.org/10.19852/j.cnki.jtcm.20230313.001

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| **Objective** | To evaluate the efficacy and safety of acupuncture and moxibustion therapy (AMT) for cancer-related psychological symptoms (CRPS) of insomnia, depression and anxiety. |
| **Methods** | Seven databases were searched for randomized controlled trials (RCT) comparing AMT to routine care or conventional drug for alleviating CRPS of insomnia, depression, and anxiety before April 2020. Two independent reviewers performed the data extraction and assessed the risk of bias. |
| **Results** | A total of **30 RCTs involving 2483 cancer patients** were enrolled. The pooled analysis indicated that the treatment group was significantly better than the control group in improving the depression effective rate [= 1.29, 95% (1.12, 1.49), 0.0004], the quality of life (QOL) [1.11, 95% (0.80, 1.42), 0.000 01], and reducing Self-rating Anxiety Scale (SAS) [□7.75, 95% (□10.44, □5.05), 0.000 01]. But there was no statistically significant difference between two groups in improving the insomnia effective rate [= 1.18, 95% (0.93, 1.51), 0.18]. The subgroup analysis showed the effectiveness of different intervention on CRPS. Compared with routine care, AMT helps relieve CRPS better evaluated by Pittsburgh Sleep Quality Index (PSQI), Hamilton Depression Scale (HAMD), and Self-rating Depression Scale (SDS), and depression effective rate. Compared with conventional drug, AMT performs better evaluated by SDS, depression effective rate and QOL. Moreover, the conventional drug showed higher treatment efficacy on improving insomnia effective rate compared with AMT. Compared to conventional drug, AMT plus conventional drug resulted in a significant reduction on CRPS such as PSQI, HAMD, SDS, and SAS, and also had a meaningful improvement on insomnia effective rate, depression effective rate and QOL. Fewer published reports were found on the adverse events of AMT than the conventional drug. |

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| **Conclusion** | The results suggested that AMT might be effective in improving CPRI; however, a definite conclusion could not be drawn because the quality of trials are low. Further large-scale and high-quality RCTs to verify the efficacy and safety of AMT on CRPS are still warranted. |

### 1.1.10. Wan 2022 Ø

Wan Q, Luo S, Wang X, Tian Q, Xi H, Zheng S, Fang Q, Chen H, Wu W, Pan R. Association of Acupuncture and Auricular Acupressure With the Improvement of Sleep Disturbances in Cancer Survivors: A Systematic Review and Meta-Analysis. Front Oncol. 2022 May 18;12:856093. https://doi.org/10.3389/fonc.2022.856093.

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| **Background** | Studies on the efficacy of acupuncture and auricular acupressure on sleep disturbances in cancer patients have been growing, but there is no specific and comprehensive systematic review and meta-analysis. This review aims to evaluate the efficacy and safety of acupuncture and auricular acupressure on sleep disturbances in cancer survivors based on existing randomized clinical trials (RCTs). |
| **Methods** | Four English-language and four Chinese-language biomedical databases were searched for RCTs published from database inception to July 30, 2021. RCTs comparing acupuncture and auricular acupressure with sham control, drug therapy, behavior therapy, or usual care for managing cancer were included. The quality of RCTs was appraised with the Cochrane Collaboration risk of bias (ROB) tool. Mean differences (MDs) and 95% confidence intervals (CIs) were calculated for the effect sizes. |
| **Results** | Thirteen RCTs with 961 patients were included. The risk of performance bias or reporting bias for most of the included trials was high or unclear. Evidence was not found for short-term effects on sleep scales compared to sham control (MD, 1.98; 95% CI, 0.33-3.64; p = 0.02; I2 = 36%), wait list control (MD, 0.40; 95% CI, -0.87-1.68; p = 0.54; I2 = 49%), drug therapy (MD, 1.18; 95% CI, -3.09-5.46; p = 0.59; I2 = 98%). For long-term effect, two sham-controlled RCTs showed no significance of acupuncture on insomnia scale scores (MD, 1.71; 95% CI, -2.38-5.81; p = 0.41; I2 = 89%). Subgroup analyses suggested no evidence that auricular acupressure (MD, 3.14; 95% CI=1.52, 4.76; p = 0.0001; I2 = 0%) or acupuncture (MD, 0.54; 95% CI=-1.27, 2.34; p = 0.56; I2 = 0%) was associated with the reduction in insomnia scale scores. |
| **Conclusions** | This systematic review and meta-analysis found no evidence about acupuncture or auricular acupressure in the improvement of sleep disturbances in cancer survivors in terms of short- or long-term effect. Adverse events were minor. The finding was inconsistent with previous research and suggested that more well-designed and large-scale randomized controlled trials are needed to identify the efficacy of acupuncture and auricular acupressure for sleep disturbances in cancer survivors. |

### 1.1.11. Wang 2022 ☆

Wang CC, Han EY, Jenkins M, Hong X, Pang S, Whitehead L, Kirk DL, Williams A. The safety and efficacy of using moxibustion and or acupuncture for cancer-related insomnia: a systematic review and meta-analysis of randomised controlled trials. Palliat Care Soc Pract. 2022 Jan 10;16:26323524211070569. https://doi.org/10.1177/26323524211070569

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| **Introduction** | This study aimed to synthesise the best available evidence on the safety and efficacy of using moxibustion and/or acupuncture to manage cancer-related insomnia (CRI). |

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| **Methods** | The PRISMA framework guided the review. Nine databases were searched from its inception to July 2020, published in English or Chinese. Randomised clinical trials (RCTs) of moxibustion and or acupuncture for the treatment of CRI were selected for inclusion. Methodological quality was assessed using the method suggested by the Cochrane collaboration. The Cochrane Review Manager was used to conduct a meta-analysis. |
| **Results** | **Fourteen RCTs** met the eligibility criteria. Twelve RCTs used the Pittsburgh Sleep Quality Index (PSQI) score as continuous data and a meta-analysis showed positive effects of moxibustion and or acupuncture (n = 997, mean difference (MD) = -1.84, 95% confidence interval (CI) = -2.75 to -0.94, p < 0.01). Five RCTs using continuous data and a meta-analysis in these studies also showed significant difference between two groups (n = 358, risk ratio (RR) = 0.45, 95% CI = 0.26-0.80, I 2 = 39%). |
| **Conclusion** | The meta-analyses demonstrated that moxibustion and or acupuncture showed a positive effect in managing CRI. Such modalities could be considered an add-on option in the current CRI management regimen. |

### 1.1.12. Yu 2022 ☆

Yu H, Liu C, Chen B, Zhai J, Ba D, Zhu Z, Li N, Loh P, Chen A, Wang B, Guo Y, Liu Y, Chen Z. The clinical efficacy and safety of acupuncture intervention on cancer-related insomnia: A systematic review and meta-analysis. Front Neurosci. 2022 Dec 15;16:1026759. https://doi.org/10.3389/fnins.2022.1026759

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| **Objective** | To evaluate the efficacy and safety of acupuncture in treating symptoms for Cancer-related Insomnia(CRI) patients. |
| **Methods** | Seven databases were searched from the time of database establishment to 31 March 2022. Randomized Controlled Trials (RCTs) on acupuncture intervention for CRI were collected. Literature screening and data extraction were performed independently by two researchers. Meta-analysis was performed using RevMan 5.4 software. |
| **Results** | A total of **13 articles with 1,109 participants** were included. Five hundred and seventeen in the treatment group and 592 in the control group. Ten of the RCTs used the PSQI rating scale and four randomized controlled trials used the ISI rating scale, and the PSQI and ISI were analyzed together as continuous data. The results of the meta-analysis were: MD = -1.83, 95%CI = [-2.71, -0.94], P < 0.0001, indicating a significant improvement in PSQI scores in patients with CRI by acupuncture intervention; MD = 0.79, 95%CI = [-0.46, 2.03], P = 0.22. Acupuncture was not statistically significant on ISI scores for patients with CRI compared to controls, which does not yet indicate that acupuncture is effective for symptoms in patients with CRI. The results of the meta-analysis of the other 4 items using sleep disorder logs as efficacy analysis data were as follow, relative risk RR = 0.47, 95%CI = [0.33, 0.66], P < 0.0001. The difference was statistically significant, indicating that acupuncture can improve the symptoms of CRI patients compared to control group. |
| **Conclusion** | Acupuncture can improve the symptoms of patients with CRI to some extent, but due to the relatively small number and low quality of the included literature in this study, more high-quality clinical trials are needed as supplement the evidences in future. |

### 1.1.13. Zhang 2022 ☆

Zhang J, Zhang Z, Huang S, Qiu X, Lao L, Huang Y, Zhang ZJ. Acupuncture for cancer-related insomnia: A systematic review and meta-analysis. Phytomedicine. 2022 Jul 20;102:154160. https://doi.org/10.1016/j.phymed.2022.154160

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| **Background** | Cancer-related insomnia is a highly prevalent complaint in cancer patients. However, there is no meta-analytic synthesis explored the efficacy of acupuncture for cancer-related insomnia among cancer patients undergoing active cancer treatments. |
| **Objective** | This systematic review and meta-analysis were performed to explore the efficacy and safety of acupuncture for insomnia in people diagnosed with cancer. |
| **Study design** | Systematic review and meta-analysis of existing randomized controlled trials on acupuncture in the treatment of cancer-related insomnia. |
| **Methods** | According to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) Statement, we identified and extracted the trials through November 2021 from ten databases and two trials record platforms (Cochrane Central Register of Controlled Trials, MEDLINE, EMBASE, PUBMED, Web of Science, PsycINFO, Allied and Complementary Medicine, Cumulative Index to Nursing and Allied Health Literature, China National Knowledge Infrastructure, Wanfang Digital Journals, ClinicalTrials, World Health Organization International Clinical Trials Registry Platform). The quality of the trials was assessed using Jadad score and Risk of Bias (2.0). A meta-analysis was synthesized using the random-effects model if the included studies were in high methodological quality. |
| **Results** | A total of 690 studies were identified, with **22 were included in the review**, and 6 of them were included in the quantitative synthesis. Studies were highly heterogeneous in terms of participant characteristics and study methodologies. Most studies recruited patients diagnosed with a specific cancer type, and breast cancer patients were the subgroup most represented. The qualitative review of available evidence suggested a beneficial efficacy of acupuncture on sleep without serious adverse events in several studies (55%). The meta-analysis revealed that acupuncture produced a significant improvement in the total Pittsburgh Sleep Quality Index (PSQI) score relative to the wait-list control among breast cancer patients undergoing active cancer treatments (MD -1.92, 95% CI -3.25 to -0.59, p = 0.005). Similar improvement of real and sham acupuncture on PSQI score change post-intervention was found (MD: -0.68, 95% CI: -2.44 to 1.07, p = 0.44). Manual acupuncture had similar effective rate as compared to estazolam immediately post-intervention (RR: 0.94, 95% CI: 0.87 to 1.01, p = 0.09), and had significantly better effective rate than estazolam at 1-week post-intervention follow-up (RR: 1.25, 95% CI: 1.10 to 1.43, p = 0.0009). All reported acupuncture related adverse events were mild or moderate in severity. |
| **Conclusion** | Acupuncture has great potential to be used to manage cancer-related insomnia for cancer patients or survivors. More studies with rigorous designs and larger sample size are warranted to verify the efficacy and safety of acupuncture for insomnia among people diagnosed with cancer, in particular among those with clinically significant insomnia. |

#### 1.1.14. Liu 2020 ☆

Liu XL, Cheng HL, Moss S, Wang CC, Turner C, Tan JY. Somatic Acupoint Stimulation for Cancer-Related Sleep Disturbance: A Systematic Review of Randomized Controlled Trials. Evid Based Complement Alternat Med. 2020. [209255]. doi

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| **Aim** | The aim of this systematic review was to analyze and synthesize available evidence for the effects of somatic acupoint stimulation (SAS) on cancer-related sleep disturbance in adults with cancer. |

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| **Methods** | Nine databases and four clinical trial registries were searched from their inception to July 2019 to identify potential articles and registered trials. Two authors independently extracted data and appraised the methodological quality of the included studies. The included studies could not be subjected to meta-analysis due to the significant variations in SAS intervention protocols and outcome measurement instruments. This systematic review therefore reported the results of the included trials narratively. |
| **Results** | **Seven studies** were identified, which involved **906 cancer patients**. SAS protocols varied across trials without an optimal evidence-based standard intervention protocol to manage cancer-related sleep disturbance. Sanyinjiao (SP6) was the most commonly selected acupoint. Manual acupuncture was typically 15-30 min in duration and was conducted once a day or once a week for a period of 1-5 weeks, whereas self-administered acupressure was typically 1-3 min in duration per point and was conducted once a day, such as during night time before going to bed, for a period of 1-5 months. The results indicated that SAS could potentially relieve cancer-related sleep disturbance and improve quality of life. Mild adverse effects were reported in three of the included studies, but none of them performed a causality analysis to clarify the association between the reported adverse events and the intervention. |
| **Conclusions** | This systematic review showed that SAS is a useful approach to relieving cancer-related sleep disturbance. However, research evidence on SAS for managing cancer-related sleep disturbance has not been fully conclusive due to the limited number of existing clinical studies with relatively small sample size and suboptimal methodological quality. Clinical trials with large sample size and robust methodology are warranted in future research. |

### 1.1.15. Matthews 2018 Ø

Matthews E, Carter P, Page M, Dean G, Berger A. Sleep-Wake Disturbance: A Systematic Review of Evidence-Based Interventions for Management in Patients with Cancer. Clin J Oncol Nurs. 2018;22(1):37-52. [99669].

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| **Background** | New or worsening sleep-wake disturbance (SWD) can occur throughout the cancer trajectory.. |
| **Objectives** | The purpose of this article is to critically review available empirical evidence supporting the efficacy of interventions for SWD, highlighting new evidence since the 2006 and 2009 Putting Evidence Into Practice (PEP) SWD publications. |
| **Methods** | A systematic review of studies published from 2009-2017 was conducted to identify effective interventions for cancer-related SWD. The PEP weight of evidence classification schema was used to categorize the strength of evidence. |
| **Findings** | Cognitive behavioral intervention/approach is the only intervention that is recommended for practice. Mindfulness-based stress reduction and exercise interventions are likely to be effective but require more evidence. Pharmacologic interventions, relaxation, imagery, meditation, **acupuncture**, yoga, massage, and psychoeducation **have insufficient evidence**. |

### 1.1.16. Choi 2016 ☆

Choi TY, Kim JI, Lim HJ, Lee MS. Acupuncture for Managing Cancer-Related Insomnia: A Systematic Review of Randomized Clinical Trials. Integr Cancer Ther. 2016. [187756].

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| **Background** | Insomnia is a prominent complaint of cancer patients that can significantly affect their quality of life and symptoms related to sleep quality. Conventional drug approaches have a low rate of success in alleviating those suffering insomnia. |

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| **Objective** | The aim of this systematic review was to assess the efficacy of acupuncture in the management of cancer-related insomnia. |
| **Methods** | A total of 12 databases were searched from their inception through January 2016 without language restriction. Randomized controlled trials (RCTs) and quasi-RCTs were included if acupuncture was used as the sole intervention or as an adjunct to another standard treatment for any cancer-related insomnia. The data extraction and the risk of bias assessments were performed by 2 independent reviewers. |
| **Results** | Of the 90 studies screened, **6 RCTs were included**. The risk of bias was generally unclear or low. Three RCTs showed equivalent effects on the Pittsburgh Sleep Quality Index and 2 RCTs showed the similar effects on response rate to those of conventional drugs at the end of treatment. The other RCT showed acupuncture was better than hormone therapy in the numbers of hours slept each night and number of times woken up each night. The 3 weeks of follow-up in 2 RCTs showed superior effects of acupuncture compared with conventional drugs, and a meta-analysis showed significant effects of acupuncture. Two RCTs tested the effects of acupuncture on cancer-related insomnia compared with sham acupuncture. One RCT showed favourable effects, while the other trial failed to do so. |
| **Conclusion** | There is a low level of evidence that acupuncture may be superior to sham acupuncture, drugs or hormones therapy. However, the number of studies and effect size are small for clinical significance. Further clinical trials are warranted. |

### 1.1.17. Lau 2016 Ø

Lau CH, Wu X, Chung VC, Liu X, Hui EP, Cramer H, Lauche R, Wong SY, Lau AY, Sit RS, Ziea ET, Ng BF, Wu JC. Acupuncture and related therapies for symptom management in palliative cancer care: systematic review and meta-analysis. Medicine (Baltimore). 2016;95(9):e2901. [160606].

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| **Purpose** | The aim of this systematic review and meta-analysis was to summarize current best evidence on acupuncture and related therapies for palliative cancer care. |
| **Methods** | Five international and 3 Chinese databases were searched. Randomized controlled trials (RCTs) comparing acupuncture and related thérapies with conventional or sham treatments were considered. Primary outcomes included fatigue, paresthesia and dysesthesias, chronic pain, anorexia, insomnia, limb edema, constipation, and health-related quality of life, of which effective conventional interventions are limited. |
| **Results** | Thirteen RCTs were included. Compared with conventional interventions, meta-analysis demonstrated that acupuncture and related therapies significantly reduced pain (2 studies, n=175, pooled weighted mean difference-0.76, 95% confidence interval: -0.14 to -0.39) among patients with liver or gastric cancer. Combined use of acupuncture and related therapies and Chinese herbal medicine improved quality of life in patients with gastrointestinal cancer (2 studies, n¼111, pooled standard mean difference: 0.75, 95% confidence interval: 0.36–1.13). Acupressure showed significant efficacy in reducing fatigue in lung cancer patients when compared with sham acupressure. Adverse events for acupuncture and related therapies were infrequent and mild. |
| **Conclusion** | **Acupuncture and related therapies are effective in reducing pain, fatigue, and in improving quality of life** when compared with conventional intervention alone among cancer patients. Limitations on current evidence body imply that they should be used as a complement, rather than an alternative, to conventional care. Effectiveness of acupuncture and related therapies for managing anorexia, reducing constipation, paresthesia and dysesthesia, **insomnia**, and limb edema in cancer patients is uncertain, warranting future RCTs in these areas. |

## 1.2. Special acupuncture techniques

### 1.2.1. Electroacupuncture

#### 1.2.1.1. Li 2025

Li K, Luo Y. Efficacy of electroacupuncture in the treatment of insomnia in cancer patients: A meta-analysis. Medicine (Baltimore). 2025 Jan 3;104(1):e41123. https://doi.org/10.1097/MD.0000000000041123

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| **Backgound** | The purpose of this meta-analysis of current studies was to assess the efficacy of electroacupuncture for cancer-related insomnia. |
| **Methods** | A comprehensive search was conducted encompassing randomized controlled trials examining the efficacy of electroacupuncture in treating cancer-related insomnia across CNKI, VIP, Wang Fang, PubMed, Embase, Cochrane library, and Web of Science, with a search deadline of December 26, 2023. The Cochrane manual's risk-of-bias evaluation was used for quality assessment, while Stata 15.0 was used for the data analysis. |
| **Results** | **Eight randomized controlled studies involving 537 individuals** were finally included. Meta-analysis results suggested that electroacupuncture improved total sleep time [SMD = 0.68, 95% CI (0.31, 1.06)], sleep efficiency [SMD = 1.26, 95% CI (0.02, 2.50)], and reduced Pittsburgh sleep quality index [SMD = -0.44, 95% CI (-0.63, -0.25)], insomnia severity index [SMD = -1.23, 95% CI (-1.88, -0.58)], and sleep onset latency [SMD = -0.76, 95% CI (-1.36, -0.15)] in cancer patients. |
| **Conclusion** | Based on the current study, we found that electroacupuncture may have a better effect on insomnia in cancer patients. |

#### 1.2.1.2. Liu 2025

Liu X, Xu N, Wang S, Jia Q. Efficacy of electroacupuncture for insomnia in cancer patients: a systematic review and meta-analysis. Front Neurol. 2025 Feb 10;16:1512052. https://doi.org/10.3389/fneur.2025.1512052

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| **Backgound** | Insomnia is a prevalent symptom among cancer patients. Electroacupuncture (EA) has been widely applied in managing sleep disorders, particularly in cancer patients or those experiencing insomnia. |
| **Objectives** | This meta-analysis aims to evaluate the efficacy and safety of electroacupuncture for treating cancer-related insomnia. |
| **Methods** | Two independent reviewers conducted comprehensive searches across multiple databases, including EMBASE, Web of Science, PubMed, the Cochrane Library, Wanfang Digital Journals, China National Knowledge Infrastructure (CNKI), and the VIP Database for Chinese Technical Periodicals. The search was completed on April 28, 2024. The reviewers independently performed literature screening, data extraction, and risk of bias (ROB) assessment using the revised Cochrane ROB tool. Data were analyzed using RevMan 5.4 and Stata 15.0 software. |

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| **Results** | **Eight randomized controlled trials (RCTs) involving 550 patients** (305 in the experimental group and 245 in the control group) were included. EA significantly reduced Pittsburgh Sleep Quality Index (PSQI) scores (SMD = -0.86, 95% CI [-1.24, -0.49], p < 0.001), Insomnia Severity Index (ISI) scores (SMD = -1.14, 95% CI [-1.59, -0.69], p < 0.001), sleep latency (SL) (SMD = -0.48, 95% CI [-0.73, -0.23], p < 0.001), and sleep disturbance (SDB) (SMD = -0.44, 95% CI [-0.73, -0.16], p = 0.002). EA also significantly lowered Hospital Anxiety and Depression Scale-Anxiety (HADS-Anxiety) scores (SMD = -0.59, 95% CI [-0.91, -0.26], p < 0.001) and Hospital Anxiety and Depression Scale-Depression (HADS-Depression) scores (SMD = -0.73, 95% CI [-1.06, -0.40], p < 0.001), while increasing total sleep time (TST) (SMD = 0.65, 95% CI [0.14, 1.17], p = 0.013). No significant differences were observed in the Athens Insomnia Scale (AIS), sleep duration (SD), sleep efficiency (SE), or sleep quality (SQ) scores between the EA and control groups. |
| **Conclusion** | Electroacupuncture has shown promising potential in treating cancer-related insomnia by increasing total sleep time and reducing sleep disturbances. However, additional high-quality studies are necessary to validate these findings. |

### 1.2.2. Auricular acupuncture

#### 1.2.2.1. Zhang 2025

Zhang C, Zhang Y, Li T, Yan C, Guan H. Auricular acupressure for chemotherapy-related insomnia in cancer patients: A systematic review and meta-analysis. Explore (NY). 2025 Jul-Aug;21(4):103188. https://doi.org/10.1016/j.explore.2025.103188

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| **Backgound** | Cancer patients undergoing chemotherapy are prone to experiencing sleep disturbances. Research has shown that auricular acupressure may be beneficial in relieving these symptoms, but high-quality evidence is lacking. This study was designed to systematically evaluate the efficacy of auricular acupressure for relieving chemotherapy-related insomnia. |
| **Methods** | This review was reported in accordance with the PRISMA framework. A total of 4 English databases (PubMed, Embase, Web of Science, The Cochrane Library) and 4 Chinese databases (CNKI, Wanfang, VIP, CBM) were searched from inception to October 31, 2024 to identify randomized clinical trials (RCTs) examining the use of auricular acupressure for the treatment of chemotherapy-related insomnia. The methods recommended by the Cochrane collaboration group were applied to evaluate the quality of the methodology. Cochrane Review Manager 5.4 was used for the meta-analysis. |
| **Results** | This meta-analysis included **1073 patients** from **14 randomized controlled trials**. We mainly compared auricular acupressure with routine nursing or sham auricular acupressure. The results showed that auricular acupressure could alleviate chemotherapy-related insomnia(MD(PSQI)=-3.68, 95 %CI [-4.74,-2.62], P < 0.00001), anxiety(SMD=-1.07, 95 %CI [-1.57,-0.57], P < 0.0001), depression (SMD=-1.14, 95 %CI [-1.78-0.50], P = 0.0005<0.05) and fatigue (SMD = -1.14, 95 % CI [-1.78 to 0.50], P = 0.0005) more effectively than sham auricular acupressure and routine nursing. |
| **Conclusion** | This meta-analysis found that auricular acupressure can relieve chemotherapy-related insomnia, anxiety, depression and fatigue, and improve the quality of life of patients. However, the current relevant literature has low quality and is highly heterogeneous, which reduces the credibility of the research results. Therefore, more rigorously designed randomized controlled trials are needed to verify these conclusions. |

#### 1.2.2.2. Xin 2024

Xin D, Cui L, Wang L, Zhang Q, Chen X, Shi Y, Zhu W, Xu N, Li W, Wang Y. Effect of auricular acupressure on sleep quality in breast cancer patients: A systematic review and meta-analysis of randomized controlled trials. Complement Ther Clin Pract. 2024 Nov;57:101876. https://doi.org/10.1016/j.ctcp.2024.101876

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| **Background and purpose** | Sleep disturbance is a very common problem among breast cancer patients, and auricular acupressure is a non-pharmacologic intervention to improve the sleep quality. This study aimed to investigate the effectiveness and safety of auricular acupressure to improve sleep quality in breast cancer patients. |
| **Methods** | Overall, 8 electronic databases in English and Chinese were systematically searched from inception to August 12, 2023 to identify eligible randomized controlled trials (RCTs). The risk of bias was assessed by version 2 of the Cochrane risk-of-bias tool for randomized trials (RoB 2.0). |
| **Results** | A total of **16 studies with 1199 participants** were included. The synthesized results showed that compared with the control group, auricular acupressure had a significant effect on improving the effective rate of sleep quality improvement in patients with breast cancer (risk ratio [RR] 1.56, 95 % confidence interval [CI] 1.14 to 2.14; P < 0.001), and that significantly reduced the Pittsburgh Sleep Quality Index (PSQI) global score (mean difference [MD] -3.47, 95 % CI -4.37 to -2.58; P < 0.001). Subgroup analysis of effective rate and PSQI score showed similar significant effects. Additionally, the improvement of sleep quality was better when auricular acupressure was performed by nurses using Vaccaria seeds. Furthermore, the optimal intervention program was performed 1-2 times a day, 3-5 min each time, and lasted for 2-4 weeks. |
| **Conclusion** | Auricular acupressure may effectively improve the sleep quality of patients with breast cancer. However, more rigorously designed, large-sample, multi-center RCTs are required to further validate the results. |

### 1.2.3. Comparison of acupuncture techniques

#### 1.2.3.1. Wang 2026 (breast cancer)

Wang Z, Yang H, Zhou Z, Liu X, Su J, Jiang H, Lin J, Zuo H, Liu G, Yuan Y, Bai Y, Li Y, Wang T, Xu Z. Comparative efficacy and safety of different acupuncture therapies for insomnia in breast cancer patients: A systematic review and Bayesian network meta-analysis. Complement Ther Clin Pract. 2026 May 22;63:102059. https://doi.org/10.1016/j.ctcp.2026.102059

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| **Background and purpose** | Insomnia is a prevalent symptom among breast cancer patients. This study aimed to compare and rank the efficacy and safety of various acupuncture and related therapies for improving sleep quality in this population. |
| **Methods** | A systematic search was conducted across PubMed, Embase, the Cochrane Central Register of Controlled Trials, Web of Science, China National Knowledge Infrastructure (CNKI), Wanfang Database, and Chinese Science and Technology Periodical Database (VIP) from inception to January 25, 2025. Effect sizes were calculated as relative risks (RRs) for dichotomous outcomes and mean differences (MDs) for continuous outcomes, with 95% credible intervals (CrIs). The study quality was assessed using the RoB 2 tool, and confidence in evidence was evaluated with Confidence in Network Meta-Analysis (CINeMA). |

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| **Results** | **Eighteen randomized controlled trials involving 1399 participants** were included. Compared to control, auricular acupressure (AP), mindfulness-based stress reduction (MBSR), MBSR plus acupressure, acupressure alone, intradermal needle (IN), and AP combined with wrist-ankle acupuncture (WAA) all significantly improved Pittsburgh Sleep Quality Index (PSQI) scores. The MD ranged from -5.04 (95% CrI: -8.07 to -1.95) for MBSR plus acupressure to -2.34 (95% CrI: -4.34 to -0.35) for IN. Based on the surface under the cumulative ranking curve (SUCRA), MBSR plus acupressure was the most effective intervention. Regarding safety, only IN (RR: 11.23, 95% CrI: 1.95 to 80.48) significantly increased the incidence of adverse reactions compared to control. |
| **Conclusion** | MBSR plus acupressure, acupressure alone, AP combined with WAA, AP alone, and MBSR alone effectively improved sleep quality in breast cancer patients and were relatively safe. |

#### 1.2.3.2. Chen 2024

Chen L, Li J, Xu S, Liu Z, Jiao Y, Zhou Z. Efficacy of acupuncture therapy on cancer-related insomnia: a systematic review and network meta-analysis. Front Neurol. 2024 Feb 13;15:1342383. doi: 10.3389/fneur.2024.1342383

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| **Objectives** | Cancer-related insomnia (CRI) takes a toll on many cancer survivors, causing distressing symptoms and deteriorating the quality of life. Acupuncture therapy has been used for CRI already. However, it is still uncertain which acupuncture regime is best for CRI. The primary objective of this review is to conduct a comparative evaluation and ranking of the effectiveness of different acupuncture therapies for CRI. |
| **Methods** | Randomized controlled trials (RCTs) that were published up to July 31, 2023, from 8 databases (PubMed, Embase, Cochrane library, Web of Science, China National Knowledge Infrastructure, Wanfang Database, VIP Database, and China Biology Medicine disc) were integrated in this study. Trials that met the inclusion criteria were evaluated the risk of bias. Pittsburgh sleep quality index (PSQI) was used to assess the efficacy of different acupuncture therapies as the primary outcome. Then, STATA 15, R, and OpenBUGS were applied to perform the network meta-analysis. PRISMA statements were followed in this network meta-analysis. |
| **Results** | A total of **37 studies** were included in this review, involving 16 interventions with 3,246 CRI participants. Auriculotherapy + moxibustion [surface under the cumulative ranking curve (SUCRA) 98.98%] and auriculotherapy (SUCRA 77.47%) came out top of the ranking, which were more effective than control, medicine, usual care and sham acupuncture. |
| **Conclusion** | Auriculotherapy + moxibustion and auriculotherapy + acupuncture emerged as the top two acupuncture regimes for CRI and future studies should pay more attention to CRI. |

#### 1.2.3.3. Chuang 2024

Chuang CW, Tsai MY, Wu SC, Liao WC. Chinese Medicines Treatment for Sleep Disturbance in Breast Cancer Survivors: A Network Meta-Analysis. Integr Cancer Ther. 2024 Jan-Dec;23:15347354241308857. https://doi.org/10.1177/15347354241308857

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| **Backgound** | Sleep disturbance and insomnia are common adverse events in patients with breast cancer (BC). Traditional Chinese Medicine (TCM) treatment for sleep disturbance includes acupuncture, acupressure, auricular acupressure/auricular acupuncture, and Qigong. However, the specific efficacy of these TCM treatment remains unclear. |

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| **Materials and methods** | This systematic review and network meta-analysis (NMA) investigated the effects of various TCM treatment on improving sleep quality in BC survivors. Only randomized controlled trials (RCTs) reporting the results of TCM treatments were included. The main NMA included 12 RCTs involving 1011 participants. The risk of bias was assessed using the RoB 2 tool for randomized controlled trials. The certainty of evidence of the NMA was assessed in accordance with GRADE (the Grading of Recommendations, Assessment, Development, and Evaluations). |
| **Results** | **Acupressure, acupuncture, auricular acupuncture/auricular acupressure**, and qigong were identified as optimal TCM treatment ($P < .05$) for enhancing sleep quality in BC survivors. |
| **Conclusion** | Our results provide some evidence that TCM treatment, particularly acupressure, can be beneficial in improving sleep quality in BC survivors. However, larger-scale clinical trials with robust methodological designs are required to validate and extend our findings. |

#### 1.2.3.4. Bi 2023

Bi L, Gao W, Zhang X, Li N, Han J, Shi M. Efficacy of traditional Chinese medicine external therapy on sleep quality in patients with cancer: A systematic review and network meta-analysis. Asia Pac J Oncol Nurs. 2023 Sep 18;10(11):100308. https://doi.org/10.1016/j.apjon.2023.100308

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| **Objective** | This network meta-analysis aims to assess and compare the effectiveness of various external therapies from traditional Chinese medicine (TCM) in enhancing sleep quality among patients with cancer. |
| **Methods** | We systematically searched nine electronic databases, encompassing five English and four Chinese databases, for randomized controlled trials (RCTs) from their inception up to August 10, 2023. The random effects model was utilized for effect size analysis, and the standardized mean difference (SMD) along with its corresponding 95% confidence interval (CI) were computed. Network meta-analysis and comparative effects ranking were executed utilizing STATA 14.0. |
| **Results** | We included **thirty-four RCTs** involving seven distinct external TCM therapies. Among these, Chinese medicine pillow (SMD = -3.27; 95% CI: -6.03 to -0.51), auricular acupressure (SMD = -2.33; 95% CI: -3.36 to -1.29), moxibustion (SMD = -2.28; 95% CI: -3.63 to -0.94), acupressure (SMD = -1.67; 95% CI: -2.64 to -0.70), and **acupuncture** (SMD = -1.43; 95% CI: -2.65 to -0.21) demonstrated significant effects in improving sleep quality when compared to usual care or waitlist. The cumulative ranking curve values revealed that the Chinese medicine pillow exhibited the highest potential for effectively enhancing sleep quality in patients with cancer, followed by auricular acupressure, moxibustion, acupressure, acupuncture, Tuina, and electroacupuncture. |
| **Conclusions** | Our study highlights the Chinese medicine pillow as an optimal external TCM therapy for ameliorating sleep quality in cancer patients, but more RCTs are needed to validate this |

#### 1.2.3.5. Cheung 2023

Cheung DST, Xu X, Smith R, Takemura N, Yeung WF, Chan WL, Lao L, Lin CC. Invasive or noninvasive? A systematic review and network meta-analysis of acupuncture and acupressure to treat sleep disturbance in cancer patients. Worldviews Evid Based Nurs. 2023 Jun;20(3):202-211. https://doi.org/10.1111/wvn.12617 .

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| **Background** | Both acupuncture and acupressure have been suggested beneficial for reducing sleep disturbance in cancer patients. While acupuncture is invasive involving needle insertion, acupressure is noninvasive. Their comparative effectiveness is unclear, hindering clinical recommendations. |
| **Aims** | This study aimed to explore the comparative effectiveness of acupuncture and acupressure on sleep in cancer patients. |
| **Methods** | This is a systematic review and Bayesian network meta-analysis. Eight key English and Chinese databases were searched. **Twenty-four randomized controlled trials involving 2002 cancer patients** comparing the effects of six treatments (manual acupuncture, electroacupuncture, acupressure, sham, enhanced usual care, and no treatment) on sleep were found. |
| **Results** | Compared with enhanced supportive care, acupressure demonstrated the largest effect size for reducing self-reported sleep disturbance (standardized mean difference [SMD] = -2.67, 95% CrI: -3.46 to -1.90; GRADE = moderate), followed by acupuncture (SMD = -1.87, 95% CrI: -2.94 to -0.81, GRADE = moderate) and electroacupuncture (SMD = -1.60, 95% CrI: -3 to -0.21; GRADE = low). The surface under the cumulative ranking curve indicates that acupressure is most likely to rank highest. |
| **Linking evidence to action** | Based on available evidence, acupressure can be recommended as the optimal treatment for reducing sleep disturbance in cancer patients. More rigorous trials are warranted to confirm whether different forms of acupuncture or acupressure have different effects on sleep in cancer patients. Particularly, studies examining acupuncture interventions alone instead of in combination with other therapies are needed. |

#### 1.2.3.6. Ou 2023

Ou Y, Lin D, Ni X, Li S, Wu K, Yuan L, Rong J, Feng C, Liu J, Yu Y, Wang X, Wang L, Tang Z, Zhao L. Acupuncture and moxibustion in patients with cancer-related insomnia: A systematic review and network meta-analysis. Front Psychiatry. 2023 Feb 16;14:1108686. https://doi.org/10.3389/fpsyt.2023.1108686. https://pubmed.ncbi.nlm.nih.gov/36873228

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| **Objectives** | Cancer-related insomnia (CRI) is one of the most common and serious symptoms in patients with cancer. Acupuncture and moxibustion have been widely applied in the treatment of CRI. Nevertheless, the comparative efficacy and safety of different acupuncture and moxibustion techniques remain unclear. This study aimed to evaluate and compare the efficacy and safety of different acupuncture and moxibustion techniques in the treatment of CRI. |
| **Methods** | Eight medical databases were comprehensively searched for relevant randomized controlled trials (RCTs) as of June 2022. Two independent reviewers assessed the risk of bias and conducted the research selection, data extraction, and quality assessment of the included RCTs. A network meta-analysis (NMA) was performed using frequency models, combining all available direct and indirect evidence from RCTs. The Pittsburgh Sleep Quality Index (PSQI) was set as the primary outcome, and adverse events and effective rates were set as the secondary outcomes. The efficacy rate was calculated as the ratio of patients with insomnia symptom relief to the total number of patients. |

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| **Results** | **Thirty-one RCTs with 3,046 participants** were included, including 16 acupuncture- and moxibustion-related therapies. Transcutaneous electrical acupoint stimulation [surface under the cumulative ranking curve (SUCRA) 85.7%] and acupuncture and moxibustion (SUCRA 79.1%) were more effective than Western medicine, routine care, and placebo-sham acupuncture. Furthermore, Western medicine showed significantly better effects than placebo-sham acupuncture. In the NMA, the acupuncture and moxibustion treatments with the best therapeutic effects for CRI were transcutaneous electrical acupoint stimulation (SUCRA 85.7%), acupuncture and moxibustion (SUCRA 79.1%), auricular acupuncture (SUCRA 62.9%), routine care combined with intradermal needling (SUCRA 55.0%), and intradermal needling alone (SUCRA 53.3%). No serious acupuncture- or moxibustion-related adverse events were reported in the included studies. |
| **Conclusion** | Acupuncture and moxibustion are effective and relatively safe in treating CRI. The relatively conservative recommended order of acupuncture- and moxibustion-related therapies for CRI is as follows: transcutaneous electrical acupoint stimulation, acupuncture and moxibustion, and auricular acupuncture. However, the methodological quality of the included studies was generally poor, and further high-quality RCTs are needed to strengthen the evidence base |

# 2. Overviews of systematic reviews

## 2.1. Guo 2024

Guo Z, Wang Y, Liu W, Huang H, Tang X, Wu Z, Lu L, Fan B, Cui S, Xu N. Acupuncture-related therapy for cancer-related insomnia: An overview of systematic reviews and meta-analysis. Complement Ther Med. 2024 Oct;85:103074. https://doi.org/10.1016/j.ctim.2024.103074

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| **Backgound** | The number of systematic reviews and meta-analyses (SRs/MAs) on acupuncture therapy for CRI is increasing; however, the credibility of the evidence remains unclear with controversial results, necessitating a comprehensive evaluation. |
| **Objective** | We aimed to critically assess the evidence in SRs/MAs regarding the effectiveness of acupuncture therapy for CRI from various aspects and conduct an exploratory analysis to identify potential issues. |
| **Method** | Two reviewers conducted comprehensive searches in eight databases. SRs/MAs of randomized controlled trials are included. After screening according to inclusion and exclusion criteria, two reviewers extracted data from eligible SRs/MAs and conducted a detailed assessment of methodological quality, risk of bias, and quality of evidence using AMSTAR-2, ROBIS, and GRADE tools. Meanwhile, we calculated the Corrected Covered Area (CCA) leveraging the GROOVE tool. After manually excluding duplicate studies, we assess the risk of bias of primary studies extracted from SRs/MAs and conducted exploratory meta-analysis. |
| **Result** | The comprehensive analysis included **10 SRs/MAs**. The AMSRAT-2 results indicate significant methodological flaws in SRs/MAs, with the main issues focusing on the lack of provision of exclusion checklist for the studies. Furthermore, over half of the SRs/MAs have a high risk of bias due to incomplete retrieval and failure to follow the protocol. Most SRs/MAs demonstrated considerable completeness in reporting quality. Notably, the overall level of evidence is low. High overlap indicates redundant SRs/MAs. Exploratory analysis suggests that acupuncture therapy may be effective for CRI; however, with a high risk of bias, caution is needed in interpreting the results. Sensitivity analysis results are stable, and the funnel plot indicates no publication bias. Most SRs/MAs acknowledge the safety of acupuncture. |

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| **Conclusion** | Currently, the credibility of acupuncture therapy for treating CRI is low and improvements are needed in methodology, risk of bias, and quality of reporting. Acupuncture therapy shows potential but lacks sufficient support; high-level evidence is warranted to elucidate the effectiveness of acupuncture in treating CRI. |

# 3. Clinical Practice Guidelines

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

## 3.1. International clinical practice guideline 2025 ⊕

Lu T, Lai H, Lin H, Ma F, Hou L, Tang L, Zhu Y, Mao H, Zhang AL, Lee MS, Ozaki A, Schveitzer MC, Zhao H, Zhong L, Jia B, Fan L, Huang J, Han B, Zhao W, Ge L, Liu J, Huang L. Using Integrative Therapies to Improve Patient-Reported Outcomes in Breast Cancer Survivors: A Living Evidence-Based Clinical Practice Guideline. J Evid Based Med. 2025 Jun;18(2):e70029. https://doi.org/10.1111/jebm.70029. https://pubmed.ncbi.nlm.nih.gov/40207746

*Recommendation 3.1* Conditional recommendations in favor of mindfulness therapy (low certainty), aromatherapy (low certainty), **acupuncture** (low certainty), and bright light therapy (very low certainty) to improve sleep quality in general breast cancer survivors.

## 3.2. Association of the Scientific Medical Societies, German Cancer Society, German Cancer Aid, (AWMF, DKG, DK, Germany) 2021 ⊕

S3-Leitlinie Komplementärmedizin in der Behandlung von onkologischen PatientInnen. September 2021.
https://www.leitlinienprogramm-onkologie.de/fileadmin/user_upload/Downloads/Leitlinien/Komplement%C3%A4r/Version_1/LL_Komplement%C3%A4r_Langversion_1.1.pdf
https://www.leitlinienprogramm-onkologie.de/fileadmin/user_upload/Downloads/Leitlinien/Komplement%C3%A4r/Version_1/LL_Komplement%C3%A4r_Evidenztabellen_1.0.pdf

11.3.1.5. *Sleep disorder*. Acupuncture. Recommendation strength: Can. Patient context: Oncological patients.

## 3.3. Arbeitsgemeinschaft Gynäkologische Onkologie (AGO, Germany) 2018 ⊕

Diagnosis and Treatment of Patients with Primary and Metastatic Breast Cancer. Complementary Therapy Survivorship. Arbeitsgemeinschaft Gynäkologische Onkologie (AGO). 2018.35P. [182073].

*Electro-acupuncture to improve on sleep and hot flashes* : Level of evidence 2a (systematic review of cohort studies), grade of evidence (B), AGO recommendation grade (+) This examination or therapeutic intervention is for the patient of limited benefit and can be performed.

## 3.4. Cancer Australia (CA, Australia) 2016 ⊕

Management of menopausal symptoms in women with a history of breast cancer. Cancer Australia. 2016. [115384].

Acupuncture can be considered for the management of *sleep disturbance* in women with a history of breast cancer (grade C) ; Limited evidence that acupuncture improves sleep.

## 3.5. Association Francophone des Soins Oncologiques de Support (AFSOS) 2014 ⊕

Association Francophone des Soins Oncologiques de Support (AFSOS). Fiches Réferentiels : L'acupuncture en onco-hématologie MAJ 2014 (online)

*Insomnies.* Acupuncture (Niveau de preuve HAS : B)

## 3.6. Canadian Association of Psychosocial Oncology (CAPO, Canada) 2012 Ø

A Pan-Canadian Practice Guideline: Prevention, Screening, Assessment and Treatment of Sleep Disturbances in Adults with Cancer. Canadian Association of Psychosocial Oncology. 2012. 253P. [180923].

There was insufficient evidence to support acupuncture or homeopathic medicines to manage chronic insomnia.

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