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Chemotherapy-Induced Peripheral Neuropathy

Neuropathie périphérique induite par chimiothérapie : évaluation de l'acupuncture

Articles connexes: - pharmacopée -

1. Revues systématiques et méta-analyses

1.1. Generic Acupuncture

1.1.1. Cai 2026

Cai L, Lin L, Xue J, Sun S, Chen Q, Wang Y, Li L, Shen Y. Efficacy of non-pharmacological interventions for chemotherapy-induced peripheral neuropathy: a systematic review and network meta-analysis for randomized controlled trials. Support Care Cancer. 2026;34(3):174. https://doi.org/10.1007/s00520-026-10316-7

Background	Chemotherapy-induced peripheral neuropathy (CIPN) is a prevalent adverse effect linked to neurotoxic chemotherapeutic agents. Current pharmacological treatments exhibit limited efficacy and notable adverse effects. The clinical effectiveness of non-pharmacological therapies, like acupuncture, physical exercise (PE), cryotherapy (CR), and compression therapy, requires systematic comparison. This study employs a network meta-analysis (NMA) to appraise the efficacy and preventive effects of various non-pharmacological interventions on CIPN.
Methods	The study adhered to the PRISMA guidelines. Eight Chinese and English databases (up to October 2025) were searched. A fixed-effect NMA was executed using Bayesian methods to appraise the effects of interventions like acupuncture, CR, and PE on the Functional Assessment of Cancer Therapy/Gynecologic Oncology Group-Neurotoxicity questionnaire, the Numerical Rating Scale, the European Organization of Research and Treatment of Cancer Quality of Life Questionnaire-CIPN twenty-item scale, and the incidence of CIPN. Additionally, the risk of bias was appraised using the Cochrane tool.
Results	In total, **27 studies were included, comprising 2136 patients**. The NMA indicated that, compared to medication, PE can effectively alleviate neurotoxicity (mean difference [MD]: -9.9, 95% credible interval [CrI] [-16, -4.3]). Acupuncture exhibited superior efficacy in modulating peripheral nerve symptoms (MD: -2.4, 95% CrI [-3.8, -1.1]), alleviating neuropathic pain (MD: -1.1, 95% CrI [-1.2, -1.0]), and reducing the incidence of CIPN (MD: 0.23, 95% CrI [0.071, 0.52]).
Conclusion	PE can notably improve neurotoxicity. Acupuncture can alleviate clinical symptoms related to sensory and motor functions in CIPN. Additionally, it is effective in reducing neuropathic pain and might serve as a preventive measure against the onset of CIPN.

1.1.2. Tian 2025

Tian H, Luo Q, Huang L, Chen G, Sun M, Liang F. Exploration of the quantitative-effectiveness association between acupuncture temporal parameters and chemotherapy-induced peripheral neuropathy in cancer patients: a dose-response meta-analysis of randomized controlled trials. Front Oncol. 2025 Feb 12;14:1527331. https://doi.org/10.3389/fonc.2024.1527331.

Backgound	Chemotherapy-induced peripheral neuropathy (CIPN) is one of the commonly reported symptoms impacting cancer survivors. This study evaluated and compared the effectiveness of acupuncture treatments for CIPN.
Methods	We searched six databases from their inception to August 2024 to identify eligible randomized controlled trials (RCTs). Primary outcome were pain scores. Secondary outcomes were quality of life including FACT/GOG-Ntx and EORTC QLQ-C30. The robust error meta-regression (REMR) method was used to evaluate the dose-response relationship across treatment parameters, including number of sessions, frequency, and duration.
Results	In total, **11 RCTs featuring 740 participants** were included. The meta-analysis demonstrated that the primary analysis achieved a significant reduction in pain scores, with a standardized mean difference of [SMD= -1.23, 95% CI = (-2.22, -0.24); $P < 0.01$; $I^2 = 95\%$], improvement quality of life including FACT/GOG-Ntx [SMD = 0.95, 95% CI = (0.02, 1.88); $P < 0.01$; $I^2 = 93\%$] and EORTC QLQ-C30 [SMD = 0.36, 95% CI = (0.03, 0.68); $P = 0.14$; $I^2 = 46\%$]. The nonlinear dose-response analysis suggests that pain improvement achieves the MCID at 16 treatment sessions, over 8 weeks, with a frequency of twice per week. Furthermore, analysis of the treatment duration chart shows that acupuncture maintains therapeutic effects during the follow-up period. Sensitivity analysis confirmed the robustness of these findings.
Conclusion	Acupuncture demonstrates significant potential in managing CIPN, particularly through individualized treatment regimens. The identified time-dose-response relationship suggests that tailoring acupuncture frequency and duration can to optimize pain relief in CIPN patients. Future high-quality studies and large-scale multicenter clinical trials are needed to validate these findings.

1.1.3. Zhao 2025

Zhao Y, Cao W, Zhang H, Rong Q, He M, Wu M, Zhao Y, Yang P. The efficacy of acupuncture in the treatment of chemotherapy-induced peripheral neuropathy in cancer patients: a systematic review and meta-analysis. J Cancer Surviv. 2025 Aug 19. doi: 10.1007/s11764-025-01869-3

Purpose	Chemotherapy-induced peripheral neuropathy (CIPN) is a common side effect in cancer patients, often emerging within the first month of chemotherapy. Severe CIPN can disrupt daily life, necessitating chemotherapy adjustments or discontinuation, which may increase cancer mortality. No standardized treatment exists, but acupuncture is widely used in China for CIPN.This study aimed to comprehensively assess the actual efficacy of acupuncture in treating CIPN in cancer patients.
Methods	We searched PubMed, Web of Science, Embase, and Cochrane Library up to October 2024 for randomized controlled trials (RCTs) on acupuncture for CIPN, following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). Methodological quality was assessed using the Cochrane risk-of-bias tool (RoB 2.0) and the modified Jadad scale. A random-effects model was used to analyze the Effect Size (ES) and 95% Confidence Interval (CI).Data analysis was performed using RevMan 5.3 software.

Results	The final analysis incorporated **1,048 patients from 18 studies**. The results presented in the forest plot demonstrated that, when compared to the control group, acupuncture exhibited superior efficacy in improving CIPN symptoms (RR = 1.11, 95%CI [1.01,1.21]), alleviating pain (SMD = -0.93, 95%CI [-1.63,-0.22]), enhancing quality of life (QoL) (MD = - 1.14, 95%CI [- 1.97, - 0.31]), and reducing chemotherapy-related neurotoxicity (MD = - 3.34, 95%CI [- 5.24, - 1.44]). Additionally, in alleviating CIPN-related pain, simple acupuncture demonstrates superior efficacy compared to electroacupuncture.
Conclusion	This study clearly demonstrates that acupuncture offers more substantial benefits to CIPN patients compared to usual care, medication, vitamin, and sham acupuncture. This research serves as a valuable reference for cancer patients, physicians, nurses, and other professional medical practitioners.

1.1.4. Li 2024

Li L, Huang Y, An C, Jing N, Xu C, Wang X, Li H, Tan T. Acupuncture in the treatment of chemotherapy-induced peripheral neuropathy: a meta-analysis and data mining. Front Neurol. 2024 Oct 29;15:1442841. https://doi.org/10.3389/fneur.2024.1442841.

Backgound	The efficacy and acupoint selection of acupuncture in treating chemotherapy-induced peripheral neuropathy (CIPN) remain controversial. This study aims to explore the specific efficacy and acupoint selection of acupuncture in treating CIPN through a meta-analysis and data mining.
Methods	Searching for clinical trials on acupuncture treatment for CIPN in 8 databases, evaluating its efficacy and safety through a meta-analysis, and exploring its acupoint selection through data mining.
Results	The meta-analysis included **21 studies and 2,121 patients**, showing that compared with the control group, the acupuncture group could significantly improve neuropathic pain intensity (SMD = -0.66, 95% CI [-1.07, -0.25], p = 0.002), significantly reduce the NCI-CTCAE (MD = -0.29, 95%CI [-0.50, -0.08], p < 0.01), significantly reduce the FACT-NXT score (MD = 2.09, 95% CI [0.73,3.45], p < 0.05), significantly increase the motor conduction velocities (MCV) of median nerve (MD = 2.38, 95% CI [2.10, 2.67], p < 0.001), the sensory conduction velocities (SCV) of the median nerve (MD = 0.56, 95 %CI [-1.45, 2.57], p = 0.58), the SCV of the tibial nerve (MD = 1.78, 95% CI [0.50, 3.05], p < 0.01), and the SCV of sural nerves (MD = 4.60, 95% CI [0.17, 9.02], p < 0.05), as well as improving the quality of life score (MD =7.35, 95% CI [1.53, 13.18], p = 0.01). Data mining showed that the core acupoints for acupuncture treatment of CIPN were LI4, ST36, LI11, LR3, and SP6.
Conclusion	Acupuncture can improve the neuropathic pain intensity, the intensity of the CIPN, MCV of the median nerve, SCV of the tibial nerve and peroneal nerve, quality of life, and has good safety in CIPN patients. LI4 (Hegu), ST36 (Zusanli), LI11 (Quchi), LR3 (Taichong), and SP6 (Sanyinjiao) are the core acupuncture points for treating CIPN, and this protocol has the potential to become a supplementary treatment for CIPN.¬

1.1.5. Ronconi 2024

Ronconi G, Gatto DM, Codazza S, Ariani M, Martire E, Cerretti L, Carella V, Coraci D, Ferriero G, Ferrara PE. Conservative non-pharmacological treatments for chemotherapy-induced peripheral neuropathies in women treated for breast cancer: a systematic review. Eur J Phys Rehabil Med. 2024 Jun;60(3):505-513. https://doi.org/10.23736/S1973-9087.24.08197-8

Introduction	Over the last few decades, the use of neo/adjuvant therapies has significantly increased the number of breast cancer survivors who experience chemotherapy-induced peripheral neuropathy (CIPN). To date, few, low-efficacy, pharmacological remedies exist to manage this side effect. For this reason, alternative treatments are increasingly being investigated as possible strategies to prevent or promote faster recovery from CIPN. In this review we aimed to provide an overview of the literature evidence regarding all the non-pharmacological and rehabilitative interventions for patients affected by CIPN secondary to breast cancer care.
Evidence acquisition	A comprehensive literature search was conducted on PubMed, Scopus and Web of Science and included a total of 1895 patients (1528 with breast cancer) with a wide range of CIPN (motor, sensory and autonomic neuropathies) and chemotherapy treatments (e.g., Taxanes, Platins, Vinca alkaloids or monoclonal antibody drugs).
Evidence synthesis	Of the initial 1108 hits, only 25 studies - describing different treatment modalities for peripheral neuropathies - were finally included in the qualitative synthesis. Most studies focused on acupuncture, physiotherapy, cryotherapy, and yoga.
Conclusions	There is still controversial evidence on conservative non-pharmacological interventions for the management of CIPN symptoms. We believe however that moderate exercise, as well as all types of stress reducing activities like sport, yoga and mindfulness, should be encouraged in cancer patients for their positive effect on global physical and psychological health. Further studies of higher methodological quality are needed to determine the best conservative approach to CIPN.

1.1.6. D'Souza 2023

D'Souza RS, Alvarez GAM, Dombovy-Johnson M, Eller J, Abd-Elsayed A. Evidence-Based Treatment of Pain in Chemotherapy-Induced Peripheral Neuropathy. Curr Pain Headache Rep. 2023 May;27(5):99-116. https://doi.org/10.1007/s11916-023-01107-4

Purpose of review	Chemotherapy-induced peripheral neuropathy (CIPN) is a debilitating and often painful condition that occurs after administration of chemotherapeutic agents. The primary objective of this systematic review was to appraise the literature on conservative, pharmacological, and interventional treatment options for CIPN pain.
Recent findings	There is level I evidence supporting modest to moderate improvement in CIPN pain from duloxetine treatment, as well as short-term modest improvement from physical therapy and **acupuncture**. Although opioid and cannabis administration may provide short-term modest improvement, administration is commonly limited by side effects. Generally, most studies reported no clinical benefit from yoga, topical neuropathic agents, gabapentinoids, and tricyclic antidepressants. Evidence is currently equivocal for scrambler therapy and transcutaneous electrical nerve stimulation. Finally, evidence on neuromodulation options is limited to mostly case reports/series and one observational study highlighting moderate improvement with auricular nerve stimulation. This systematic review provides an overview of conservative, pharmacologic, and interventional treatment modalities for CIPN pain. Furthermore, it provides a level of evidence and degree of recommendation based on the United States Preventive Services Task Force (USPSTF) criteria for each specific treatment modality.

1.1.7. Papadopoulou 2023

Papadopoulou M, Stamou M, Bakalidou D, Moschovos C, Zouvelou V, Zis P, Tzartos J, Chroni E, Michopoulos I, Tsivgoulis G. Non-pharmacological Interventions on Pain and Quality of Life in Chemotherapy Induced Polyneuropathy: Systematic Review and Meta-Analysis. In Vivo. 2023 Jan-

Feb;37(1):47-56. https://doi.org/10.21873/invivo.13053

Background/aim	Chemotherapy-induced peripheral neuropathy (CIPN) is a common side effect of cancer treatment, resulting in pain, numbness, instability, and thus affecting quality of life (QoL), occasionally leading to discontinuation of chemotherapy. Pharmacological treatments are not sufficient. Non-pharmacological interventions (NPIs) have also been tried. This study aimed to systematically review the efficacy of NPIs on pain and QoL in patients suffering from CIPN.
Materials and methods	The databases searched were Pubmed, Cohrane, and Scopus for randomized controlled trials (RCTs) published in the last 5 years (2017-2022). Studies were considered eligible, if they assessed adult patients suffering from CIPN because of any chemotherapeutic drug for any type and any stage of cancer and if study protocols included non-pharmacological intervention with a structured protocol.
Results	A total of 1,496 records were identified. Finally, 10 RCTs including 495 patients (253 in the intervention group and 242 in the control group) were included for meta-analysis. Intervention protocols included **acupuncture (n=6)**, exercise (n=3), and yoga (n=1). NPIs significantly reduced neuropathic pain. However, the effect on QoL was not significant.
Conclusion	NPIs are beneficial in the treatment of pain in patients with CIPN but their impact on QoL is not statistically supported. Larger sample sizes, more homogenous in outcome measures and interventions are needed to further explore NPIs' efficacy on CIPN symptoms.

1.1.8. Pei 2023

Pei LX, Yi Y, Guo J, Chen L, Zhou JY, Wu XL, Sun JH, Chen H. The effectiveness and safety of acupuncture/electroacupuncture for chemotherapy-induced peripheral neuropathy: a systematic review and meta-analysis. Acupunct Med. 2023 Apr;41(2):73-85. https://doi.org/10.1177/09645284221076512

Objective	Chemotherapy-induced peripheral neuropathy (CIPN) is a dose-limiting adverse effect of anticancer agents with virtually no effective treatment. Safe and effective therapies are needed urgently. Acupuncture shows therapeutic possibilities in this regard but needs to be further evaluated.
Methods	A systematic search was conducted in seven databases from their inception to April 2020. Randomized controlled trials (RCTs) focused on acupuncture/electroacupuncture (EA) for the treatment of CIPN were included. Revman 5.3 software was used for meta-analysis if there was no significant heterogeneity. Otherwise, qualitative analysis was utilized.

Results	**Nine studies involving 582 patients** were included in this review. Most of the studies exhibited unclear risk of bias because some details were not mentioned. As the clinical heterogeneity was significant, qualitative analysis was performed to describe nerve conduction velocity, effective rate for motor neuropathy, pain scores, quality of life and adverse events. Meta-analysis was performed on four studies to analyze the effective rate for sensory neuropathy due to inconspicuous heterogeneity. The results indicated that acupuncture may generate a better effect on sensory neuropathy than vitamin B (risk ratio = 1.60, 95% confidence interval = 1.31-1.95, I2 = 0%, p < 0.00001). The efficacy of EA plus glutathione (GSH) appeared to be better than that of GSH alone in alleviating sensory neurotoxicity and in improving nerve conduction velocity. Acupuncture plus methylcobalamin showed more favorable effects than methylcobalamin alone in relieving neuralgia, restoring nerve conduction velocity and improving quality of life. In terms of pain relief and improved CIPN-specific quality of life, acupuncture plus standard care was better than standard care alone. In terms of pain relief, EA was more effective than usual care.
Conclusion	Acupuncture may be effective and safe in the treatment of CIPN according to the analyzed studies. However, more studies with higher methodological quality are warranted in order to be able to draw firmer conclusions. Future rigorous RCTs will be necessary to confirm the effectiveness and safety of acupuncture for CIPN.

1.1.8.1. Zhang 2023

Zhang X, Wang A, Wang M, Li G, Wei Q. Non-pharmacological therapy for chemotherapy-induced peripheral neurotoxicity: a network meta-analysis of randomized controlled trials. BMC Neurol. 2023 Dec 11;23(1):433. https://doi.org/10.1186/s12883-023-03485-z

Background	Chemotherapy-induced peripheral neurotoxicity (CIPN) is the most common adverse effect in patients undergoing chemotherapy, and no effective interventions are currently available for its prevention and treatment. Non-pharmacological therapies appear to be beneficial for the prevention and treatment of CIPN, but it remains unclear which therapy is most effective. The aim of this study was to identify the most effective non-pharmacological therapy for CIPN patients.
Methods	PubMed, Web of Science, Embase, and Cochrane Library were searched for randomized controlled trials on non-pharmacological therapies for CIPN. The primary outcomes included pain and peripheral neuropathological symptoms, and the secondary outcomes included quality of life, sensory and motor symptoms. The pairwise analysis and a network meta-analysis were performed using a random effects model.
Results	A total of 46 articles were included in this study, involving 2,878 participants. Our study showed that massage was more effective in pain-alleviating compared with **acupuncture** [SMD = 0.81, 95%CI (0.04, 1.57)], vitamin and gabapentin [SMD = 2.56, 95%CI (1.39, 3.74)], and usual care and placebo [SMD = 0.9, 95%CI (0.31, 1.49)]. As for attenuating peripheral neuropathological symptoms, massage was more effective than usual care and placebo [SMD = 0.75, 95%CI (0.33, 1.17)], sensorimotor training [SMD = 1.17, 95%CI (0.24, 2.10)], electrostimulation [SMD=-1.18, 95%CI (-2.14, -0.21)], multimodal exercise [SMD=-0.82, 95%CI (-1.57, -0.08)], and resistance training [SMD = 1.03, 95%CI (0.11, 1.95)]. Massage was also more effective than other non-pharmacological therapies in improving quality of life, sensory and motor symptoms.
Conclusions	According to our study, massage has advantages in alleviating pain, improving quality of life, and improving peripheral neuropathological symptoms and has better effect than other non-pharmacological interventions, representing certain clinical significance. However, the results of this study should be interpreted with caution due to the limitations of the included studies. In the future, more high-quality multi arm randomized controlled trials can be attempted to provide direct comparisons of the relative effects of non-pharmacological interventions.

1.1.9. Xu 2022 ⊕⊕⊕

GRADE	⊕⊕⊕⊖	Moderate

Xu Z, Wang X, Wu Y, Wang C, Fang X. The effectiveness and safety of acupuncture for chemotherapy-induced peripheral neuropathy: A systematic review and meta-analysis. Front Neurol. 2022 Oct 3;13:963358. https://doi.org/10.3389/fneur.2022.963358

Objectives	This systematic review and meta-analysis aimed to evaluate the effectiveness and safety of acupuncture on chemotherapy-induced peripheral neuropathy (CIPN).
Methods	We searched for relevant randomized controlled trials (RCTs) in PubMed, Cochrane Library, and Embase databases from their inception to 1 April 2022. The Functional Assessment of Cancer Therapy/Gynecologic Oncology Group-Neurotoxicity (FACT/GOG-Ntx), Brief Pain Inventory-Short Form (BPI-SF), the European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire-Core30 (EORTC QLQ-C30), Numerical Rating Scale (NRS), and adverse events were the outcome measures. All studies had at least one of these outcome measures. Mean differences (MDs) with 95% confidence intervals (CIs) were assessed in the meta-analysis using the RevMan 5.3 software.
Results	**Five studies** were included in the analysis. The results showed that acupuncture and **placebo acupuncture** were not significantly different in reducing chemotherapy-induced neurotoxicity and functional disability (random-effects estimates; MD: 4.30; 95% CI: -0.85~9.45; P = 0.10; I2 = 74%). Acupuncture was better than **placebo acupuncture** in reducing pain severity and pain interference with patients' daily function (fixed-effect estimates; MD: -1.14; 95% CI: 1.87 to -0.42; P = 0.002; I2 = 13%). Acupuncture was not significantly different from **placebo acupuncture** in relieving CIPN symptoms (MD: -0.81; 95% CI: -2.02 to 0.40, P = 0.19). Acupuncture improved quality of life better than **placebo acupuncture** (MD: 10.10; 95% CI: 12.34 to 17.86, P = 0.01). No severe adverse events were recorded in all five studies.
Conclusion	This meta-analysis suggests that acupuncture may be more effective and safer in reducing pain severity and pain interference with patients' daily function than placebo acupuncture. Additionally, acupuncture may improve the quality of life of patients with CIPN. However, large sample size studies are needed to confirm this conclusion.

1.1.10. Liu 2021 ☆

Liu Yu-Fei, Lai Bao-Yon, An Tian, et al. [Efficacy of Acupuncture for Chemotherapy-induced Peripheral Neuropathy: a Systematic Review and Meta-analysis]. Shanghai Journal of Acupuncture and Moxibustion. 2021;40(4):511. [219067].

Objective	To evaluate the efficacy of acupuncture for the treatment of chemotherapy-induced peripheral neuropathy (CIPN).
Method	The databases of CNKI, Wanfang Data, VIP, PubMed and Cochrane Library were searched up to April 20, 2020. Meta-analysis was performed using RevMan 5.3 and Stata 15.0 software after two independent researchers independently completed literature screening, data extraction and risk assessment for bias.
Result	A total of 904 patients were enrolled in 1 8 studies, including 453 in the experimental group and 45 1 in the control group. Meta-analysis results showed that acupuncture could improve motor nerve conduction velocity [SMD=0.58, 95%CI(0.13, 1.03)] and sensory nerve conduction velocity [SMD=O.40, 95%CI(0.18, 0.61)] ofthe common peroneal nerve, and could improve NRS score [SMD=-1 .36, 95%CI(-1 .96, -0.76)], but there was no significant difference in median nerve conduction velocity between the two groups (P>0.05).

Conclusion	The present study indicated that acupuncture could effectively improve the common peroneal nerve conduction velocity and relieve pain symptoms. However, the conclusion still needs to be verified by large-sample and high-quality randomized controlled trials.

1.1.11. Jin 2020 ☆☆

Jin Y, Wang Y, Zhang J, Xiao X, Zhang Q. Efficacy and Safety of Acupuncture against Chemotherapy-Induced Peripheral Neuropathy: A Systematic Review and Meta-Analysis. Evid Based Complement Alternat Med. 2020. [214017]. doi

Objective	To determine the effectiveness and safety of acupuncture for chemotherapy-induced peripheral neuropathy. The review has been registered on the “PROSPERO” website; the registration number is CRD42020151654.
Methods	A comprehensive literature search was performed on 7 electronic databases from the time of inception to March 2020. RCTs studies on acupuncture for CIPN compared with medication or sham acupuncture were included. Statistical analysis was carried out using RevMan 5.3.
Results	In total, **19 RCTs** covering **1174 patients** were enrolled. The results showed that acupuncture significantly increased the effective rate of CIPN compared with medicine and sham acupuncture. And acupuncture had a good effect on the recovery of nerve conduction velocity and improving pain. Among the acupoints involved in the treatment of CIPN, LI4, LI11, ST36, EX10 (Bafeng), and EX-UE 9 (Baxie) were the most commonly used.
Conclusion	The use of acupuncture in the management of CIPN is safe and effective. The most used acupoints for CIPN are LI4, LI11, ST36, EX10 (Bafeng), and EX-UE 9 (Baxie).

1.1.12. Hwang 2020 ⊕⊕

GRADE	⊕⊕⊖⊖	Low

Hwang MS, Lee HY, Choi TY, Lee JH, Ko YS, Jo DC, Do K, Lee JH, Park TY. A systematic review and meta-analysis of the efficacy of acupuncture and electroacupuncture against chemotherapy-induced peripheral neuropathy. Medicine (Baltimore). 2020;99(17):e19837. [208843]. doi

Background	Chemotherapy -induced peripheral neuropathy (CIPN) occurs in 68.1% of patients within the first month of undergoing chemotherapy; however, standardized treatment for CIPN has not been established yet. The efficacy of acupuncture, a widely used treatment for CIPN in South Korea, has not been studied sufficiently. This study aimed to review the studies that evaluated the efficacy of acupuncture or electroacupuncture (EA) in treating CIPN.
Methods	A literature search was performed on relevant international databases - MEDLINE, Embase, the Allied and Complementary Medicine Databases, and China National Knowledge Infrastructure - as well as Korean databases - the National Digital Science Library, Oriental Medicine Advanced Searching Integrated System, DBpia, and Korean Studies Information Service System. Randomized controlled trials (RCTs) that aimed to treat CIPN symptoms with acupuncture or EA and set not only a control group with a conventional pharmacological treatment or injection, but also a placebo control or sham-acupuncture group, were included. Meta-analysis was conducted to elucidate the efficacy of acupuncture/EA on the basis of symptom score.

Results	Of the 13 studies included in the literature review, 12 RCTs compared acupuncture and pharmacological treatments. There were 3 EA RCTs, but only 1 RCT compared EA and sham-EA. A total of 832 participants were included in these studies. Five RCTs showed that acupuncture was more effective than pharmacological treatment in terms of efficacy rate. Regarding the risk of bias summary, the quality of included studies was poor. Only 1 study compared the efficacy of EA and sham EA; therefore, the specific efficacy of acupuncture could not be elucidated.
Conclusion	Acupuncture is safe, but the symptom-alleviating effect on CIPN can hardly be determined because of methodological deficiencies of the included studies. In terms of the clinical efficacy rate, acupuncture was more effective than conventional pharmacological treatments.

1.1.13. Chien 2019 ☆☆

Chien TJ, Liu CY, Fang CJ, Kuo CY. The Efficacy of Acupuncture in Chemotherapy-Induced Peripheral Neuropathy: Systematic Review and Meta-Analysis. Integr Cancer Ther. 2019. [201982]. -DOI-

Background	Chemotherapy-induced peripheral neuropathy (CIPN) has no cure, but acupuncture may provide relief through its known neuromodulation or neuroendocrine adjustment. This review aimed to assess the efficacy of acupuncture in treating CIPN.
Method	A literature review following the PRISMA Statement was performed, searching 7 databases from inception through August 2019. All studies were clinical trials of the effect of acupuncture on CIPN. The methodological quality of these trials was assessed using Cochrane criteria; meta-analysis software (RevMan 5.2) was used to analyze the data. Data Sources: The databases searched were the following: MEDLINE (Ovid), Embase, Cochrane CENTRAL, Scopus, World Health Organization International Clinical Trials Registry Platform, CNKI (China National Knowledge Infrastructure), and Wanfang Med Online.
Results	We examined **386 cancer patients from 6 randomized control trials**, which had high quality, based on the modified Jadad scale. Meta-analysis showed that acupuncture led to significant improvements in pain scores (-1.21, 95% confidence interval [CI] = -1.61 to -0.82, P < .00001) and nervous system symptoms based on Functional Assessment of Cancer Therapy/Neurotoxicity questionnaire scores (-2.02, 95% CI = -2.21 to -1.84, P < .00001). No significant change was noted in nerve conduction velocity (1.58, 95% CI = -2.67 to 5.83, P = .47).
Conclusion	Acupuncture can effectively relieve CIPN pain and functional limitation. The limited number of subjects warrants a larger scale study.

1.1.14. Li 2019 ~

Li K, Giustini D, Seely D. A systematic review of acupuncture for chemotherapy-induced peripheral neuropathy. Curr Oncol. 2019;26(2):e147–e154. [202648]. -DOI-

Objectives	In cancer patients, chemotherapy-induced peripheral neuropathy (cipn) is a common complication, characterized by pain, loss of sensation, and numbness. Medical treatment for peripheral neuropathies has been shown to be ineffective for cipn. Acupuncture has been shown to be safe and effective in treating cancer-related symptoms and other peripheral neuropathies. For the present review, we aimed to evaluate the efficacy of acupuncture for the treatment of cipn.

Design	Comprehensive searches for relevant studies were conducted in Ovid embase, the Web of Science, Ovid medline, the Cochrane Central Register of Controlled Trials (central), cinahl (ebsco Information Services, Ipswich, MA, U.S.A.), and the ClinicalTrials.gov Web site. References from previous systematic reviews were also searched. Additional trials were found in the reference lists of relevant papers and in searches of Google Scholar and acupuncture-specific Web sites. Included studies were randomized controlled trials (rcts) of any type of acupuncture used to treat patients with cipn.
Results	Three clinical trials (203 participants) were included. Two studies found acupuncture to be effective in alleviating cipn pain and improving quality of life. One study found no benefit in improving neuropathic pain, symptoms, or quality of life. Study quality was variable and included a moderate overall risk of bias.
Conclusions	The evidence is insufficient to recommend acupuncture for the treatment or prevention of cipn. Further research is needed to evaluate the effects of acupuncture in the treatment of cipn. Given that acupuncture is considered safe and might provide relief for patients, it can be considered at the clinician's discretion.

1.1.15. Baviera 2019 ~

[No Acupuncture RCTs]

Baviera AF , Olson K , Paula JM , Toneti BF , Sawada NO. Acupuncture in adults with Chemotherapy-Induced Peripheral Neuropathy: a systematic review. Rev Lat Am Enfermagem. 2019. [196367]. doi

Objective	to analyze and synthesize knowledge about the effect of acupuncture on chemotherapy-induced peripheral neuropathy symptoms in adults with cancer.
Method	the method used was a Systematic Review. Potential articles were identified by searching in the PubMed of National Library of Medicine, Cumulative Index to Nursing and Allied Health Literature, Embase, Cochrane Central and Scopus. Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses strategy, 607 articles were identified. After removing the duplicates, all titles and abstracts were reviewed, and seven articles were selected for full review. After the full review, five studies were selected for inclusion.
Results:	of the five articles included, four were cohort studies and one was a quasi-experimental study. All articles showed that acupuncture was associated with an improvement in the peripheral neuropathy, but the type of protocol, use of medications, time of treatment, and different outcome measures made it difficult to compare the studies.
Conclusion	the use of acupuncture appears to be associated with an improvement in the symptoms of chemotherapy-induced peripheral neuropathy and has no side effects. In order to improve the evidence about benefits associated with acupuncture, more experimental studies using both subjective and objective measures are needed.

1.1.16. Hou 2018 Ø

[No Acupuncture RCTs]

Hou S, Huh B, Kim HK, Kim KH, Abdi S. Treatment of Chemotherapy-Induced Peripheral Neuropathy: Systematic Review and Recommendations. Pain Physician. 2018;21(6):571-592. [189237]. doi

Background	Chemotherapy-induced peripheral neuropathy (CIPN) is a commonly encountered disease entity following chemotherapy for cancer treatment. Although only duloxetine is recommended by the American Society of Clinical Oncology (ASCO) for the treatment of CIPN in 2014, the evidence of the clinical outcome for new pharmaceutic therapies and non-pharmaceutic treatments has not been clearly determined.
Objective	To provide a comprehensive review and evidence-based recommendations on the treatment of CIPN. STUDY DESIGN: A systematic review of each treatment regimen in patients with CIPN.
Methods	The literature on the treatment of CIPN published from 1990 to 2017 was searched and reviewed. The 2011 American Academy of Neurology Clinical Practice Guidelines Process Manual was used to grade the evidence and risk of bias. We reviewed and updated the recommendations of the ASCO in 2014, and evaluated new approaches for treating CIPN.
Results	A total of 26 treatment options in 35 studies were identified. Among these, 7 successful RCTs, 6 failed RCTs, 18 prospective studies, and 4 retrospective studies were included. The included studies examined not only pharmacologic therapy but also other modalities, including laser therapy, scrambler therapy, magnetic field therapy and **acupuncture**, etc. Most of the included studies had small sample sizes, and short follow-up periods. Primary outcome measures were highly variable across the included studies. No studies were prematurely closed owing to its adverse effects. LIMITATIONS: The limitations of this systematic review included relatively poor homogeneous, with variations in timing of treatment, primary outcomes, and chemotherapeutic agents used.
Conclusion	The evidence is considered of moderate benefit for duloxetine. Photobiomodulation, known as low level laser therapy, is considered of moderate benefit based on the evidence review. Evidence did not support the use of lamotrigine and topical KA (4% ketamine and 2% amitriptyline). The evidence for tricyclic antidepressants was inconclusive as amitriptyline showed no benefit but nortriptyline had insufficient evidence. Further research on CIPN treatment is needed with larger sample sizes, long-term follow-up, standardized outcome measurements, and standardized treatment timing.
Acupuncture	*Level of Strength of Evidence*: Class IV. *Level of Confidence in Evidence*: Very low. *Strength of the Recommendations*: Level U Insufficient.

1.1.17. Oh 2018 ☆

Oh PJ, Kim YL. [Effectiveness of Non-Pharmacologic Interventions in Chemotherapy Induced Peripheral Neuropathy: A Systematic Review and Meta-Analysis]. J Korean Acad Nurs. 2018;48(2):123-142. [Article in Korean] [158610]. doi

Purpose	This study was conducted to evaluate the effectiveness of non-pharmacologic interventions in chemotherapy-induced peripheral neuropathy (CIPN).
Methods	PubMed, Cochrane Library CENTRAL, EMBASE, CINAHL, and several Korean databases (Until August 2017) were searched. The main search strategy combined terms for peripheral neuropathy and presence of neoplasms. The risk of bias was assessed using the Cochrane's Risk of Bias tool for randomized studies and the Risk of Bias Assessment tool for non-randomized studies. To estimate the effect size, a meta-analysis of the studies was performed using the Rev Man 5.3 program of the Cochrane Library random-effects models were used in the analyses.

Results	Twenty-two studies with a total of 954 participants met the inclusion criteria. Of the 22 studies, 12 were used to estimate the effect size of the non-pharmacologic interventions. The non-pharmacologic interventions used in patients with CIPN were exercise, acupuncture, massage, and foot bath. The **acupuncture significantly reduced CIPN symptoms and signs (d=-0.71) and CIPN pain (d=-0.73) (p<.001)**. Massage and foot bath were also effective in reducing CIPN symptoms (d=-0.68; 95% CI=-1.05, -0.30; p<.001; I^2=19%).Exercises were effective in improving muscle strength and endurance(d=-0.55) and quality of life (d=-2.96), but they were not significantly effective in improving CIPN.
Conclusion	Although these results provide **little evidence of the effectiveness of acupuncture**, massage, and foot bath in the treatment of CIPN, they suggest that these interventions can reduce CIPN symptoms in patients with cancer. However, the findings of this study should be interpreted with caution as there is a relative lack of data in this field, and additional well-designed studies are needed.

1.1.18. Brami 2016 Ø

Brami C, Bao T, Deng G. Natural products and complementary therapies for chemotherapy-induced peripheral neuropathy: A systematic review. Crit Rev Oncol Hematol. 2016;98:325-34. [190348].

Objectives	Chemotherapy-induced peripheral neuropathy (CIPN) is a serious dose-limiting side-effect without any FDA-approved treatment option. Prior reviews focus mostly on pharmacological interventions, but nonpharmaceutical interventions have also been evaluated.
Methods	A Web of Science and PubMed database search to identify relevant RCTs from January 2005 to May 2015 included the terms: CIPN, cancer; and supplements, vitamin E, goshajinkigan, kampo, acetyl-L-carnitine, carnitine, alpha-lipoic acid, omega-3, glutamine, or glutamate; or massage, acupuncture, mind-body practice, yoga, meditation, Tai-Chi, physical activity, or exercise.
Results	Of 1465 publications screened, 12 RCTs evaluated natural products and **one evaluated electroacupuncture**. Vitamin E may help prevent CIPN. L-Glutamine, goshajinkigan, and omega-3 are also promising. Acetyl-L-carnitine may worsen CIPN and alpha-lipoic acid activity is unknown. **Electroacupuncture was not superior to placebo**. No RCTs were published regarding other complementary therapies, although some studies mention positive incidental findings.
Conclusions	Natural products and complementary therapies deserve further investigation, given the lack of effective CIPN interventions.

1.1.19. 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].

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.

1.1.20. Franconi 2013 Ø

Franconi G, Manni L, Schröder S, Marchetti P, Robinson N. A systematic review of experimental and clinical acupuncture in chemotherapy-induced peripheral neuropathy. Evid Based Complement Alternat Med. 2013. [166737].

Background	Chemotherapy-induced peripheral neuropathy (CIPN) is a common side effect that can be very disabling and can limit or delay the dose of chemotherapy that can be administered. Acupuncture may be effective for treating peripheral neuropathy.
Aim	The aim of this study was to review the available literature on the use of acupuncture for CIPN. The systematic literature search was performed using MEDLINE, Google Scholar, Cochrane Database, CINHAL, and ISI Proceedings. Hand searching was conducted, and consensus was reached on all extracted data. Only papers in the English language were included, irrespective of study design.
Results	From 3989 retrieved papers, 8 relevant papers were identified. One was an experimental study which showed that electroacupuncture suppressed CIPN pain in rats. In addition, there were 7 very heterogeneous clinical studies, **1 controlled randomised study using auricular acupuncture, 2 randomized controlled studies using somatic acupuncture**, and 3 case series/case reports which suggested a positive effect of acupuncture in CIPN. Conclusions. Only one controlled randomised study demonstrated that acupuncture may be beneficial for CIPN. All the clinical studies reviewed had important methodological limitations.
Conclusions	Further studies with robust methodology are needed to demonstrate the role of acupuncture for treating CIPN resulting from cancer treatment.

1.2. Special Acupuncture Techniques

1.2.1. Comparison of Acupuncture techniques

1.2.1.1. Li 2025

Li Y, Liu S, Qiao HF. Acupuncture-moxibustion for chemotherapy-induced peripheral neuropathy: A systematic review and network meta-analysis. World J Acupunct Moxibustion. 2025 Jul;35(3):197-207. https://doi.org/10.1016/j.wjam.2025.06.001.

Background	Chemotherapy-induced peripheral neuropathy (CIPN) is a common neurotoxic reaction for patients undergoing anticancer regimens. More and more studies show that acupuncture-moxibustion plays a positive role in the management and prevention of CIPN.
Objective	To evaluate the clinical effect of acupuncture-moxibustion in patients with CIPN, with a focus on assessing its effectiveness on improving treatment response rates, alleviating pain, enhancing quality of life (QoL), and improving nerve conduction. Additionally, the study compares the differences in clinical effectiveness among various acupuncture therapies for CIPN management.
Methods	Six databases (PubMed, Embase, Cochrane Library, Web of Science, OVID, and China National knowledge infrastructure [CNKI]) were searched from earliest available dates to December 1, 2024, and only randomized controlled trials (RCTs) containing relevant search terms were included. Network meta-analysis of the RCT data were conducted to assess the effective rate of the treatment as the primary outcome. Nerve conduction, pain scores, and QoL were assessed as secondary outcomes. The version 2 of the Cochrane risk-of-bias tool for randomized trials (RoB 2) was used to examine methodological quality, and Stata 15.1 was used to take network meta-analysis.
Results	A total of **34 RCTs involving 2039 participants** and 9 acupuncture-moxibustion therapies were included. The network meta-analysis evaluated the effect of different acupuncture therapies across four outcomes: effective rate, pain scores, QoL, and nerve conduction. For effective rate, electroacupuncture combined with moxibustion ranked first with a surface under the cumulative ranking curve (SUCRA) value of 62.9 %, followed by acupoint application (56.9 %) and moxibustion (52.3 %). Electroacupuncture combined with moxibustion had the highest effective rate compared to standard of care treatments (odds ratio [OR] = 1.62, 95 % confidence interval [CI] −5.18 to 8.43). For alleviating pain, auricular acupressure had the highest SUCRA value (85.9 %), while electroacupuncture and electroacupuncture combined with three-edged needle ranked second (63.4 %) and third (51.0 %), respectively. Auricular acupressure significantly reduced pain (SMD= −1.73, 95 % CI −3.54 to 0.08). For QoL, warming needle ranked first (SUCRA= 92.0 %), followed by electroacupuncture (48.7 %) and filiform needle (43.0 %). Warming needle significantly improved QoL scores (SMD= −0.75, 95 % CI −1.66 to 0.15). For nerve conduction, electroacupuncture combined with three-edged needle had the highest SUCRA value (100 %), while moxibustion and filiform needle ranked second (65.3 %) and third (39.2 %), respectively. Electroacupuncture combined with three-edged had the best neuroprotective effect (SMD = 1.85, 95 % CI 1.23 to 2.47).
Conclusion	Network meta-analysis based on the primary outcome (effective rate) suggests that electroacupuncture combined with moxibustion seems to be the optimal acupuncture therapy for chemotherapy-induced peripheral neuropathy (CIPN). Secondary outcomes exhibited considerable heterogeneity: auricular acupressure demonstrated superior efficacy in pain relief, electroacupuncture combined with three-edged needle showed greater advantages in improving nerve conduction function, while warm needling was associated with more significant improvements in QoL. Given the variability in interventions across different outcome measures and the methodological limitations of included studies, the current evidence requires cautious interpretation

1.2.1.2. Yeh 2024

Yeh ML, Liao RW, Yeh PH, Lin CJ, Wang YJ. Acupuncture-related interventions improve chemotherapy-induced peripheral neuropathy: A systematic review and network meta-analysis. BMC Complement Med Ther. 2024 Aug 19;24(1):310. https://doi.org/10.1186/s12906-024-04603-1

Backgound	The previous effects of acupuncture-related interventions in improving chemotherapy-induced peripheral neuropathy (CIPN) symptoms and quality of life (QoL) remain unclear in terms of pairwise comparisons.
Aims	This systematic review and network meta-analysis aimed to determine the hierarchical effects of acupuncture-related interventions on symptoms, pain, and QoL associated with CIPN in cancer patients undergoing chemotherapy.
Methods	Nine electronic databases were searched, including PubMed, Embase, Cochrane Library, EBSCO, Medline Ovid, Airiti Library, China National Knowledge Infrastructure (CNKI), China Journal full-text database (CJFD), and Wanfang. Medical subject heading terms and text words were used to search for eligible randomized controlled trials published from database inception to May 2023.
Results	A total of **33 studies involving 2,027 participants** were included. Pairwise meta-analysis revealed that acupuncture-related interventions were superior to usual care, medication, or dietary supplements in improving CIPN symptoms, CIPN pain, and QoL. Furthermore, network meta-analysis indicated that acupuncture plus electrical stimulation (acupuncture-E) had the greatest overall effect among the various interventions. The surface under the cumulative ranking curve (SUCRA) revealed that acupuncture-E ranked the highest in improving CINP symptoms. Acupuncture alone was most effective in reducing CIPN pain, and acupuncture plus moxibustion (acupuncture-M) ranked highest in enhancing QoL.
Conclusion	This finding suggests that acupuncture-related interventions can provide patients with benefits in improving CIPN symptoms, pain, and QoL. In particular, acupuncture-E could be the most effective approach in which the provided evidence offers diverse options for cancer patients and healthcare professionals.
Implication for the profession and/or patient care	These findings provide valuable insights into the potential benefits of acupuncture-related interventions for managing symptoms, pain, and QoL associated with CIPN in patients undergoing chemotherapy. Among the various interventions studied, overall, acupuncture-E had the most significant impact and was effective for a minimum duration of 3 weeks. On the other hand, transcutaneous electrical acupoint/nerve stimulation (TEAS) was identified as a noninvasive and feasible alternative for patients who had concerns about needles or the risk of bleeding. It is recommended that TEAS interventions should be carried out for a longer period, preferably lasting 4 weeks, to achieve optimal outcomes.

1.2.1.3. Zhang 2023

Zhang T, Zhang Q, Zhu P, Sun W, Ding Z, Hu L. The Efficacy of Acupuncture in the Treatment of Chemotherapy-Induced Peripheral Neuropathy: A Network Meta-Analysis. Altern Ther Health Med. 2023 Nov;29(8):898-906. PMID: 37708563.

Background	Chemotherapy-induced peripheral neuropathy (CIPN), one of the most common adverse events associated with chemotherapy, may affect efficacy because of the interruption of chemotherapy or change of regimen in severe cases, and may even increase cancer mortality. Relevant data supports the evidence that acupuncture can treat pain and sensory abnormalities. However, choosing the most effective acupuncture therapy is difficult because of the lack of evidence-based medicine and comparisons between different acupuncture therapies for treating CIPN. The aim of this study was to use a network meta-analysis (NMA) to evaluate the efficacy of different acupuncture therapies for CIPN.

Methods	We searched Embase, PubMed, Web of Science, The Cochrane Library, The Chinese Journal Full Text Database, Chinese Biomedical Literature Database, and WanFang Database for randomized controlled trials (RCTs) of acupuncture for CIPN. The search period was from the creation of the relevant library to August 10, 2023. A total of 2 investigators independently performed literature screening, data extraction, and risk for bias evaluation. Stata 14.0 software (StataCorp LLC, College Station, Texas USA), was used for the NMA.
Results	A total of 13 eligible RCTs involving 746 patients and 6 acupuncture therapies were included in the study. The NMA results showed that electroacupuncture was superior to moxibustion, manual acupuncture, acupoint injection and Western medicine in improving the total effective rate of treatment of CIPN; electroacupuncture + moxibustion was better than manual acupuncture, acupoint injection, and Western medicine. Manual acupuncture's total effective rate was better than Western medicine. However, electroacupuncture was the most effective treatment for CIPN according to the surface under the cumulative ranking curve (SUCRA) ranking.
Conclusion	After a comprehensive evaluation of 6 acupuncture therapies for treating CIPN based on NMA, electroacupuncture may be the best option for treating CIPN. However, would be more convincing to get evidence from more RCTs.

1.3. Special Clinical Forms

1.3.1. Breast cancer

1.3.1.1. Huang 2026

Huang B, Zhou M, Song S, Ma S, Jiang M. Efficacy and safety of acupuncture in the treatment of chemotherapy-induced peripheral neuropathy in breast cancer patients: a systematic review and meta-analysis. Front Neurol. 2026 Jan 14;16:1690446. https://doi.org/10.3389/fneur.2025.1690446

Background	Chemotherapy-induced peripheral neuropathy (CIPN) is a common and debilitating side effect in breast cancer survivors. This meta-analysis evaluates the efficacy and safety of acupuncture for CIPN management.
Methods	We systematically searched PubMed, Embase, Web of Science, Cochrane Library, China National Knowledge Infrastructure, Wanfang Database, VIP Database, and Chinese Biomedical Literature Database from database inception to August 3, 2025, for randomized controlled trials (RCTs) on acupuncture treatment for CIPN in breast cancer patients. We used RevMan 5.2 and Stata 16.0 for meta-analysis.
Results	A total of **10 RCTs involving 653 patients** were included. Treatment group significantly improved the clinical efficacy versus control group (RD = 0.22, 95% CI: 0.10, 0.33; $p < 0.001$). Chemotherapeutic agent subgroup analysis showed that acupuncture was beneficial for taxane-induced CIPN (RD = 0.26, 95% CI: 0.14, 0.38; $p < 0.001$) and utidelone-induced CIPN (RD = 0.33, 95% CI: 0.10, 0.56; $p = 0.004$), while the effect for CIPN from unspecified agents was not statistically significant (RD = 0.11, 95% CI: -0.20, 0.43; $p = 0.484$). The observed efficacy ranking was: utidelone-induced CIPN > taxane-induced CIPN > CIPN from unspecified agents. Acupuncture also reduced pain intensity (SMD = -0.65, 95% CI: -1.01, -0.29; $p < 0.001$) and FACT-NTX (WMD = 3.66, 95% CI: 1.00, 6.32; $p = 0.007$). No significant differences were found for peroneal nerve conduction velocity (WMD = 1.07, 95% CI: -4.25, 6.39; $p = 0.694$), quality of life score (SMD = 0.54, 95% CI: -0.20, 1.27; $p = 0.153$), or incidence of adverse reactions (RD = 0.03, 95% CI: -0.07, 0.13; $p = 0.540$).

Conclusion	In breast cancer patients with CIPN, acupuncture improved clinical efficacy, reduced pain intensity, and enhanced FACT-NTX scores, particularly in utidelone- and taxane-related cases. No clear benefits were seen for nerve conduction velocity, quality of life score, or incidence of adverse reactions. These findings support acupuncture as a safe and effective adjunct for CIPN symptom management in breast cancer patients.

1.3.2. Pediatric Oncology

1.3.2.1. Jung 2016

Jung M, Rein N, Fuchs B. [Physical Therapy for Chemotherapy-induced Peripheral Neuropathy in Pediatric Oncology]. Klin Padiatr. 2016;228(6-07):313-318. [Article in German] [189374].

Background	Chemotherapy-induced peripheral neuropathy is a frequent side-effect of drugs that are used in the treatment of cancer. Affected individuals can suffer from motor, sensory or autonomy nerve damage. Further medication is used for the treatment of CIPN which can cause further side-effects. Patients should be offered physical therapy treatment to relieve the symptoms.
Objective	The aim of this article is to give an overview of available literature investigating physical therapy in CIPN in pediatric oncology.
Methods	To determine relevant literature, a systematic review was conducted in the databases CINAHL, The Cochrane Library, ERIC, MEDPILOT, PEDro, PsycARTICLES, PsycINFO, PubMed and DIMDI. Besides the methodological quality of the identified literature is supposed to be reviewed.
Results	**There is no current literature regarding the subject of this article**, so no evaluation of the quality could be carried out. Although several publications concerning adults could be identified and transfer could be established for pediatrics.
Conclusion	**Acupuncture appeared to be effective in the treatment of CIPN in adults. Good results appeared especially regarding pain**. Sensorimotor training, balance training, electrotherapy and alternative methods like Reiki and Yoga showed good results for patients symptoms. These treatment methods give a future prospect how CIPN in children can be treated successfully - but further pediatric research is necessary.

Colorectal Cancer

1.3.2.2. Derksen 2017

Derksen TM, Bours MJ, Mols F, Weijenberg MP. Lifestyle-Related Factors in the Self-Management of Chemotherapy-Induced Peripheral Neuropathy in Colorectal Cancer: A Systematic Review. Evid Based Complement Alternat Med. 2017. [99415].

Background	Chemotherapy-induced peripheral neuropathy (CIPN) is a common adverse effect of chemotherapy treatment in colorectal cancer (CRC), negatively affecting the daily functioning and quality of life of CRC patients. Currently, there are no established treatments to prevent or reduce CIPN.
Objective	The purpose of this systematic review was to identify lifestyle-related factors that can aid in preventing or reducing CIPN, as such factors may promote self-management options for CRC patients suffering from CIPN.

Methods	A literature search was conducted through PubMed, Embase, and Google Scholar. Original research articles investigating oxaliplatin-related CIPN in CRC were eligible for inclusion.
Results	In total, 22 articles were included, which suggested that dietary supplements, such as antioxidants and herbal extracts, as well as physical exercise and complementary therapies, such as acupuncture, may have beneficial effects on preventing or reducing CIPN symptoms. However, many of the reviewed articles presented various limitations, including small sample sizes and heterogeneity in study design and measurements of CIPN.
Conclusions	No strong conclusions can be drawn regarding the role of lifestyle-related factors in the management of CIPN in CRC patients. Certain dietary supplements and physical exercise may be beneficial for the management of CIPN, but further research is warranted.

2. Overviews of systematic reviews

2.1. Yeh 2025

Yeh ML, Hsu CC, Lin M, Lin CJ, Lin JG. Effects of Acupuncture-related Intervention on Chemotherapy-Induced Peripheral Neuropathy and Quality of Life: An Umbrella Review. Complement Ther Med. 2025 Feb 1:103131. https://doi.org/10.1016/j.ctim.2025.103131

Backgound	Numerous studies have explored the role of acupuncture-related treatments in alleviating chemotherapy-induced peripheral neuropathy (CIPN) and improving the quality of life for patients with cancer, resulting in mixed findings. This umbrella review aimed to synthesize existing systematic reviews (SRs) to deliver an updated assessment of the certainty of evidence concerning the effects of acupuncture-related treatments on CIPN and quality of life among a diverse group of patients with cancer.
Methods	This umbrella review considered eligible SRs published on one of nine electronic databases between inception and August 2024. It included adult patients with cancer of any stage who were undergoing chemotherapy. Interventions encompassed acupuncture, either alone or with electrical stimulation or moxibustion, and transcutaneous electrical acupoint/nerve stimulation (TEAS). The outcomes analyzed were changes in CIPN, nerve conduction velocity (NCV), and quality of life.
Results	The outcomes were evaluated using data obtained from **14 SRs** that demonstrated moderate to high methodological and reporting quality. The findings showed that acupuncture (either alone or combined with electrical stimulation) and TEAS effectively alleviated CIPN symptoms, reduced CIPN pain, improved NCV, and enhanced quality of life.
Conclusion	The findings of this umbrella review indicate that these benefits were usually noticeable by the second week of treatment, persisted until the sixth week, and then gradually declined. Sensory nerve recovery occurred more rapidly than motor nerve recovery, often within 1.5 weeks. Although acupuncture combined with moxibustion or acupressure also enhanced patient outcomes, there was insufficient information available for further study analysis.

2.2. Ye 2025

Ye AL, Abdi S. Beyond p-values: a cross-sectional umbrella review of chemotherapy-induced peripheral neuropathy treatments. Front Pain Res (Lausanne). 2025 Mar 19;6:1564662. https://doi.org/10.3389/fpain.2025.1564662

Introduction	Chemotherapy-induced peripheral neuropathy (CIPN) is a common side effect of neurotoxic chemotherapy agents, significantly impacting the daily lives of many cancer survivors. Despite thousands of articles published on CIPN, we remain no closer to a successful treatment regimen for the condition. In recent years, several new clinical trials and systematic reviews have been published, many exploring nonpharmaceutical interventions, prompting the need for a comprehensive synthesis of this emerging evidence.
Methods	We conducted an umbrella review to identify and appraise the **19 systematic reviews (SRs)** published in 2023 that examined randomized controlled trials (RCTs) for established CIPN treatment. We focused our analysis on the three most researched treatment options: oral drugs, exercise, and acupuncture. RCTs not previously synthesized together were reviewed, and effect size analyses were performed to allow readers to interpret the existing literature beyond binary p-values.
Results	Our analysis of RCTs revealed the following key findings. For cancer survivors with CIPN after completing chemotherapy, serotonin-norepinephrine reuptake inhibitors (SNRIs) as well as **acupuncture** provided at least short-term relief for pain and sensory symptoms. For patients with CIPN who were actively undergoing chemotherapy, home-based balance and strength training exercises appeared to alleviate symptoms. Effect size analyses highlighted variability in treatment responses, underscoring the limitations of relying solely on p-values to assess intervention efficacy.
Discussion	Through an umbrella review approach, we demonstrate that SRs are often less systematic than expected. None of the 19 SRs captured all relevant RCTs within their search timeframe. However, by cross-referencing SRs, we identified 41 RCTs across 42 publications, illustrating the feasibility of an umbrella review approach to uncover relevant trials. Furthermore, many SRs exhibited methodological concerns that limit the interpretability of their findings. Finally, we discuss multiple opportunities for refining methods and reporting in future CIPN treatment trials.

2.3. Shi 2023

Shi H, Yuan X, Fan W, Yang X, Liu G. An umbrella review of the evidence to guide decision-making in acupuncture therapies for chemotherapy-induced peripheral neuropathy. J Cancer Res Clin Oncol. 2023 Nov;149(17):15939-15955. https://doi.org/10.1007/s00432-023-05369-8

Background	Acupuncture therapy is believed to have therapeutic potential for patients suffering from chemotherapy-induced peripheral neuropathy (CIPN). This umbrella review aims to summarize and evaluate the evidence from current systematic reviews/meta-analyses (SRs/MAs) on the effectiveness of acupuncture treatment for CIPN.
Methods	We conducted a comprehensive search in eight electronic databases for SRs/MAs that included RCTs on acupuncture treatment for CIPN. Two separate researchers independently evaluated the methodological quality, reporting quality, and evidence quality of the SRs/MAs that were included in the study. Additionally, we examined the extent of overlap among the included RCTs by calculating the corrected covered area (CCA). Furthermore, we assessed the dependability of the effect sizes by conducting excess significance tests. We conducted a quantitative synthesis of all RCTs included in the SRs/MAs to obtain objective and updated conclusions. Furthermore, we also conducted an analysis of the acupuncture points used in RCTs.

Results	This umbrella review includes **9 SRs/MAs**, and their methodological quality, risk of bias, reporting quality, and evidence quality were all deemed unsatisfactory. Out of the 9 SRs/MAs, 28 RCTs were included, with a total CCA of 25.4%, indicating a high degree of overlap. The test of super-significance did not yield any significant results. Our updated meta-analysis suggests that CIPN patients can benefit from acupuncture therapy, as indicated by effectiveness in measures including BPI-SF, VAS, FACT-NTX, NRS, SCV, and NCI-CTCAE. Egger's test and sensitivity analysis demonstrate the reliability and stability of this conclusion. The commonly used acupuncture points in the current RCTs include ST36, LI11, LI4, LR3, and SP6.
Conclusion	Based on the existing evidence, acupuncture is effective and safe for patients with CIPN, as it can significantly improve effective rate, pain symptoms, quality of life, and nerve conduction velocity. However, given the low quality of current evidence, we should be cautious in interpreting this conclusion.

2.4. Hao 2020 ☆

Hao J, Zhu X, Bensoussan A. Effects of Nonpharmacological Interventions in Chemotherapy-Induced Peripheral Neuropathy: An Overview of Systematic Reviews and Meta-Analyses. Integr Cancer Ther. 2020. [211585]. doi

Introduction	Chemotherapy-induced peripheral neuropathy (CIPN) is one of the prevalent and disabling side effects of cancer treatment. However, management strategies for CIPN currently remain elusive, with treatment restricted to neuropathic pain medications, supportive care, and chemotherapy dosing adjustments. This overview explores evidence on the potential benefits and safety of nonpharmacological interventions in preventing and treating CIPN in cancer patients.
Methods	Seven databases were searched for systematic reviews of randomized controlled trials (RCTs). The methodological quality of the selected reviews was assessed by AMSTAR 2, and the quality of evidence was judged by GRADE. Twenty-eight systematic reviews were considered eligible for this review.
Results	It was found that nonpharmacological interventions (**acupuncture**, exercise, herbal medicine, nutritional supplements) provided potential benefits for patients with CIPN. Furthermore, Chinese herbal medicine, administered orally or externally, significantly prevented and/or relieved the incidence and severity of CIPN in comparison to control groups (no additional treatment, placebo, and conventional western medicine). However, the quality of evidence and strength of recommendations were compromised by the inconsistencies and imprecision of included studies. The main concerns regarding the quality of systematic reviews included the lack of sufficiently rigorous a priori protocols, and the lack of protocol registration adopted in the included studies.
Conclusions	Though looking across reviews, Chinese herbal medicine appear generally effective in CIPN, uncertainty remains about the effects of many other nonpharmacological interventions. The evidence on what works was particularly compromised by reporting and methodological limitations, which requires further investigation to be more certain of their effects.

3. Clinical Practice Guidelines

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

3.1. American Society of Clinical Oncology / Society for Integrative Oncology

(ASCO/SIO, USA 2022) ⊕

Mao JJ, Ismaila N, Bao T, Barton D, Ben-Arye E, Garland EL, Greenlee H, Leblanc T, Lee RT, Lopez AM, Loprinzi C, Lyman GH, MacLeod J, Master VA, Ramchandran K, Wagner LI, Walker EM, Bruner DW, Witt CM, Bruera E. Integrative Medicine for Pain Management in Oncology: Society for Integrative Oncology-ASCO Guideline. J Clin Oncol. 2022 Sep 19:JCO2201357. https://doi.org/10.1200/JCO.22.01357

Chemotherapy-induced peripheral neuropath. *Recommendation* 1.8. **Acupuncture** may be offered to patients experiencing chemotherapy-induced peripheral neuropathy from cancer treatment (Type: Evidence based-informal consensus, benefits outweigh harms; Evidence quality: Low; Strength of recommendation: Weak). *Recommendation* 1.9.Reflexology or **acupressure** may be offered to patients experiencing chemotherapy-induced peripheral neuropathy from cancer treatment (Type: Evidence based, benefits outweigh harms; Evidence quality: Low; Strength of recommendation: Weak).

3.2. Gynecologic Cancer Intergroup (GCIG, International) 2022 ⊕

Woopen H, Sehouli J, Davis A, Lee YC, Cohen PA, Ferrero A, Gleeson N, Jhingran A, Kajimoto Y, Mayadev J, Barretina-Ginesta MP, Sundar S, Suzuki N, van Dorst E, Joly F. GCIG-Consensus guideline for Long-term survivorship in gynecologic Cancer: A position paper from the gynecologic cancer Intergroup (GCIG) symptom benefit committee. Cancer Treat Rev. 2022;107:102396. [211605]. https://doi.org/10.1016/j.ctrv.2022.102396

Neuropathy: Supportive care such as physiotherapy, physical activity, referral to podiatrists, patient education i.e. adequate footwear, **acupuncture**, support in daily activities can be helpful.

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

Interdisciplinary Evidenced-based Practice Guideline for the Early Detection, Diagnosis, Treatment and Follow-up of Breast Cancer. German Guideline Program in Oncology (German Cancer Society, German Cancer Aid, AWMF). 2021. [219442]. https://www.leitlinienprogramm-onkologie.de/fileadmin/user_upload/S3_Guideline_Breast_Cancer.pdf

It is recommended that general practitioners in private practice ask about pain using pain scales. They should offer interventions such as taking acetaminophen, NSAIs, physical activity and/or **acupuncture**. They should also refer you to a suitable specialist. They should also ask about peripheral neuropathies, especially numbness and paraesthesias in the upper and lower extremities, and offer therapeutic measures such as physical activity or drug therapy such as duloxetine.

3.4. American Society of Clinical Oncology (ASCO, USA) 2020 Ø

Loprinzi CL, Lacchetti C, Bleeker J, Cavaletti G, Chauhan C, Hertz DL, Kelley MR, Lavino A, Lustberg MB, Paice JA, Schneider BP, Lavoie Smith EM, Smith ML, Smith TJ, Wagner-Johnston N, Hershman DL. Prevention and Management of Chemotherapy-Induced Peripheral Neuropathy in Survivors of Adult Cancers: ASCO Guideline Update. J Clin Oncol. 2020;38(28):3325-3348.. [219308]. doi

Outside the context of a clinical trial, no recommendations can be made on the use of the following interventions for the prevention of CIPN: **Acupuncture**,Cryotherapy, Compression therapy, Exercise therapy, Ganglioside-monosialic acid (GM-1). Type of recommendation: no recommendation; Evidence quality: low; Strength of recommendation: not applicable). Note: While preliminary evidence suggests a potential for benefit from these interventions, larger sample–sized definitive studies are needed to confirm efficacy and clarify risks.

3.5. Association of the Scientific Medical Societies, German Cancer Society, German Cancer Aid, (AWMF, DKG, DK, Germany) 2020 Ø

Supportive Therapie bei onkologischen PatientInnen. Leitlinienprogramm Onkologie. Deutsche Krebsgesellschaft, Deutsche Krebshilfe, AWMF. 2020. [219443]. https://www.leitlinienprogramm-onkologie.de/fileadmin/user_upload/Downloads/Leitlinien/Supportivtherapie/LL_Supportiv_Langversion_1.3.pdf

Chemotherapy-induced polyneuropathy. Due to the lack of evidence, no statement can currently be made about the effectiveness of **acupuncture** in chemotherapy-induced polyneuropathy.

3.6. European Society for Medical Oncology (ESMO), European Oncology Nursing Society (EONS) and European Association of Neuro-Oncology (EANO) 2020 ⊕

Jordan B, Margulies A, Cardoso F, Cavaletti G, Haugnes HS, Jahn P, Le Rhun E, Preusser M, Scotté F, Taphoorn MJB, Jordan K; ESMO Guidelines Committee. Systemic anticancer therapy-induced peripheral and central neurotoxicity: ESMO-EONS-EANO Clinical Practice Guidelines for diagnosis, prevention, treatment and follow-up. Ann Oncol. 2020;31(10):1306-1319. [202043]. doi

Acupuncture might be considered in selected patients to treat CIPN symptoms [II, C].

3.7. Arbeitsgemeinschaft Gynäkologische Onkologie (AGO, Germany) 2018 Ø

- Diagnosis and Treatment of Patients with Primary and Metastatic Breast Cancer. Supportive Care and Management of Side Effects. Arbeitsgemeinschaft Gynäkologische Onkologie (AGO). 2018. 82P. [182071].

Chemotherapy-induced Peripheral Neuropathy – *Prevention* : Electro-acupuncture; Level of evidence : 1b (individual RCT), grade of evidence (B), AGO recommendation grade (-) This examination or therapeutic intervention may be for the patient be disadvantageous and should not be done.

- Diagnosis and Treatment of Patients with Primary and Metastatic Breast Cancer. Complementary Therapy Survivorship. Arbeitsgemeinschaft Gynäkologische Onkologie (AGO). 2018;:35P. [182073].

Treatment of chemotherapy induced polyneuropathy. Acupuncture. *Prophylactically*. Level of evidence : 1b (individual RCT), grade of evidence (B), AGO recommendation grade (-) This examination or therapeutic intervention may be for the patient be disadvantageous and should not be done. *Therapeutically.* Level of evidence : 2b (individual Cohort Study), grade of evidence (B), AGO recommendation grade (+/-) This examination or therapeutic intervention has for the patient no advantage shown. It can be done in individual cases. Based on current knowledge, there is currently no general recommendation to be pronounced.

3.8. Pallaborative North West (UK) 2018 ⊕

Coyle S, McGlynn L, Ting G et al. Guidelines for the Management of Cancer Related Neuropathic. Pallaborative North West. 2018.
https://drive.google.com/file/d/1JqFxWxzkaiv4HY7uoMazlbR_GSSXmbM7/view

Non Pharmacological Options. Although the evidence is lacking for cancer-related neuropathic pain, non-pharmacological approaches should be considered alongside pharmacological therapies. This may include: transcutaneous electrical nerve stimulation (TENS); **acupuncture**; hydrotherapy and psychological interventions.

3.9. American Cancer Society/American Society of Clinical Oncology (ACS/ASCO, USA) 2016 ⊕

Runowicz CD, Leach CR, Henry NL, Henry KS, Mackey HT, Cowens-Alvarado RL, Cannady RS, Pratt-Chapman ML, Edge SB, Jacobs LA, Hurria A, Marks LB, LaMonte SJ, Warner E, Lyman GH, Ganz PA. American Cancer Society/American Society of Clinical Oncology Breast Cancer SurvivorshipCare Guideline. J Clin Oncol. 2016;34(6):611-35. [198256].

Pain and neuropathy Recommendation 3.9: It is recommended that primary care clinicians : (b) should offer interventions, such as acetaminophen, nonsteroidal anti-inflammatory drugs, physical activity, and/or **acupuncture**, for pain (LOE 5 I).

3.10. Alberta Health Services (AHS, Canada) 2015 Ø

Follow-up care for early-stage breast cancer. Clinical Practice Guideline. Alberta Health Services. 2015. 29P. [177969].

Peripheral Neuropathy. Other alternative treatment modalities, such as **acupuncture**, capsaicin cream, alpha-lipoic acid, and biofeedback have been used to manage the symptoms of peripheral neuropathy; however, these methods have not been tested rigorously.

3.11. American Society of Clinical Oncology (ASCO, USA) 2014 Ø

Hershman DL, Lacchetti C, Dworkin RH, et al. Prevention and management of chemotherapy-induced peripheral neuropathy in survivors of adult cancers: American Society of Clinical Oncology clinical practice guideline. J Clin Oncol. 2014;32(18):1941-67. [202743]. DOI

A number of nonpharmacologic interventions have been investigated for their role in preventing or treating peripheral neuropathy. However, the paucity of RCT evidence prohibited inclusion of those studies in this systematic review. Moreover, the studies were often conducted in diabetic populations, with no specific focus on CIPN. Nevertheless, several of the interventions have been tested in populations that included patients with cancer experiencing CIPN and, as such, merit further examination. Evidence of the efficacy and effectiveness of one such intervention, acupuncture, was systematically reviewed by Franconi et al for the treatment of CIPN. Seven clinical studies of varying designs and methodological rigor were identified. Although there were some indications of improvement in symptoms and pain scores in most included studies, the current available evidence is limited.

3.12. 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 (URL)

Neuropathies périphériques chimio-induites : acupuncture (niveau de preuve HAS : C)

3.13. British Columbia Cancer (BCA, Canada) 2014 ⊕

Symptom Management Guidelines: chemotherapy- induced peripheral neuropathy BC Cancer Agency. 2014. 6P. [178738].

Complementary Alternative Medicŕine (CAM) therapy may be helpful for some individuals: Massage, Acupuncture, Transcutaneous electrical nerve stimulation(TENS)

3.14. Alberta Health Services, Alberta Provincial Breast Tumour Team (Canada) 2013 Ø

Alberta Provincial Breast Tumour Team. Follow-up care for early-stage breast cancer. Edmonton (Alberta): CancerControl Alberta. 2013; 26P. [167265].

Peripheral Neuropathy. Other alternative treatment modalities, such as acupuncture, capsaicin cream, alpha-lipoic acid, and biofeedback have been used to manage the symptoms of peripheral neuropathy; however, these methods have not been tested rigorously.

3.15. American College of Chest Physicians (ACCP, USA) 2013 ⊕

Deng GE, Rausch SM, JoneS LW, Gulati A, Kumar NB, GreenleE H, Pietanza MC, Cassileth BR. Complementary therapies and integrative medicine in lung cancer: diagnosis and management of lung cancer, 3rd ed: American College Of Chest Physicians Evidence-Based Clinical Practice Guidelines. Chest. 2013;143(5 Suppl):420-36. [159371].

Recommendation 2.5.3.2. In patients with cancer related pain and peripheral neuropathy, acupuncture is suggested as an adjunct treatment in patients with inadequate control of symptoms (Grade 2C).

3.16. American College of Chest Physicians (ACCP, USA) 2007 ⊕

Cassileth BR, Deng GE, Gomez JE, Johnstone PA, Kumar N, Vickers AJ; American College of Chest Physicians. Complementary therapies and integrative oncology in lung cancer: Accp Evidence-Based Clinical Practice Guidelines (2nd Edition). Chest. 2007;132(3sup:340s-54s. [146961]

Recommendation 7. Acupuncture is recommended as a complementary therapy when pain is poorly controlled or when side effects such as neuropathy or xerostomia from other modalities are clinically significant. Grade of recommendation, 1A
Recommendation 11. In patients with lung cancer with symptoms such as dyspnea, fatigue, chemotherapyinduced neuropathy, or postthoracotomy pain, a trial of acupuncture is recommended. Grade of recommendation, 2C

4. Randomized Controlled Trials

4.1. Sources incluses

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3. **Chien 2019**: Chien TJ, Liu CY, Fang CJ, Kuo CY. The Efficacy of Acupuncture in Chemotherapy-Induced Peripheral Neuropathy: Systematic Review and Meta-Analysis. Integr Cancer Ther. 2019. [201982].
4. **Li 2019**: Li K, Giustini D, Seely D. A systematic review of acupuncture for chemotherapy-induced peripheral neuropathy. Curr Oncol. 2019;26(2):e147–e154. [202648].
5. **Oh 2018** : Oh PJ, Kim YL. [Effectiveness of Non-Pharmacologic Interventions in Chemotherapy Induced Peripheral Neuropathy: A Systematic Review and Meta-Analysis]. J Korean Acad Nurs. 2018;48(2):123-142. [158610].
6. **Brami 2016**: Brami C, Bao T, Deng G. Natural products and complementary therapies for chemotherapy-induced peripheral neuropathy: A systematic review. Crit Rev Oncol Hematol. 2016;98:325-34. [190348].
7. **Lau 2016**: 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].
8. **Franconi 2013**: Franconi G, Manni L, Schröder S, Marchetti P, Robinson N. A systematic review of experimental and clinical acupuncture in chemotherapy-induced peripheral neuropathy. Evid Based Complement Alternat Med. 2013. [166737].

4.2. List

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	Chan K, Lui L, Lam Y, Yu K, Lau K, Lai M, Lau W, Tai L, Mak C, Bian Z, Zhong LL. Efficacy and safety of electroacupuncture for oxaliplatin-induced peripheral neuropathy in colorectal cancer patients: a single-blinded, randomized, sham-controlled trial. Acupunct Med. 2022 Nov 3. https://doi.org/10.1177/09645284221125421	Acudoc2
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	Stringer J, Ryder WD, Mackereth PA, Misra V, Wardley AM. A randomised, pragmatic clinical trial of ACUpuncture plus standard care versus standard care alone FOr Chemotherapy Induced peripheral Neuropathy (ACUFOCIN). Eur J Oncol Nurs. 2022 Oct;60:102171. https://doi.org/10.1016/j.ejon.2022.102171	Acudoc2

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	Huang CC, Ho TJ, Ho HY, Chen PY, Tu CH, Huang YC, Lee YC, Sun MF, Chen YH. Acupuncture Relieved Chemotherapy-Induced Peripheral Neuropathy in Patients with Breast Cancer: A Pilot Randomized Sham-Controlled Trial. J Clin Med. 2021 Aug 20;10(16):3694. https://doi.org/10.3390/jcm10163694	Xu 2022
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