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Cancer-Related Fatigue

Fatigue en oncologie : évaluation de l'acupuncture

Articles connexes: - conduites thérapeutiques - pathologie - acupuncture expérimentale - qigong - évaluation de la pharmacopée chinoise -

1. Systematic Reviews and Meta-Analysis

1.1. Generic Acupuncture

1.1.1. Long 2024

Long Y, Zhou Z, Zhou S, Zhang G. The effectiveness of different non-pharmacological therapies on cancer-related fatigue in cancer patients: A network meta-analysis. Int J Nurs Stud. 2024 Dec;160:104904. https://doi.org/10.1016/j.ijnurstu.2024.104904

Backgound	Cancer-related fatigue is the most common symptom of subjective and persistent nature in cancer patients, which almost runs through the whole process of disease and treatment and rehabilitation, seriously affects the effect of anti-tumor treatment and reduces the quality of life of patients. Non-pharmacological management is one of the key links to relieve cancer-related fatigue, however, there are many types of non-pharmacological management and the related guidelines do not recommend the optimal nursing program for cancer-related fatigue. In our study, Network Meta-analysis was used to compare the effectiveness of different non-pharmacological therapies in Cancer-related fatigue to make their treatment and care more clinically valuable.
Methods	Randomized controlled trials about non-pharmacological therapies for cancer-related fatigue were searched in Chinese and English databases including China National Knowledge Infrastructure, Wanfang Data Knowledge Service Platform, Chinese Scientific Journal database, Chinese Biomedical Database, Google Scholar, Pubmed, Web of science, Cochrane Library, Sci-Hub, ScienceDirect, and other relevant medical websites including Medlive and DingXiangYuan. The search time was from the establishment of the database to December 2023. The quality of the included Randomized controlled trials was evaluated by two trained researchers using the Cochrane Risk of Bias Assessment Tool, and data were independently extracted from the included literature and analyzed by reticulated Meta-analysis using Stata 18.0 statistical software.
Results	A total of 49 studies with 24 non-drug management methods, and 3887 patients were included. The results of network meta-analysis showed that the use of massage therapy to improve cancer-related fatigue had a more significant advantage over conventional nursing measures and other non-pharmacological therapies in cancer patients, followed by **infrared laser moxibustion and ginger-isolated moxibustion** with traditional Chinese medicine characteristics, while the worst effect was strengthening excise.

Conclusions	The existing evidence shows that massage therapy has the best effect in the intervention of cancer-related fatigue. However, due to the diversity of non-pharmacological therapies and the small number of studies included in each therapy, the coverage of this study is insufficient, and more large-sample, multi-center and high-quality randomized controlled trials are needed for further verification in the future.

1.1.2. Belloni 2023

Belloni S, Bonucci M, Arrigoni C, Dellafiore F, Caruso R. A Systematic Review of Systematic Reviews and a Pooled Meta-Analysis on Complementary and Integrative Medicine for Improving Cancer-Related Fatigue. Clin Ther. 2023 Jan;45(1):e54-e73. https://doi.org/10.1016/j.clinthera.2022.12.001

Purpose	Evidence supporting complementary and integrative medicine (CIM) for improving cancer-related fatigue (CRF) is still fragmented. This study therefore critically appraised all the systematic reviews (SRs) regarding the effectiveness of CIM in mitigating CRF in adults.
Methods	A systematic review of SRs and a meta-analysis were conducted in 4 databases. The effect sizes of the included SRs were quantitatively pooled (standardized mean difference [SMD]; 95% CI) using a random-effects model. Heterogeneity was tested by using $\chi 2$ (Q) tests and I^2 statistics.
Findings	Twenty-two SRs met the inclusion criteria, and results from 20 SRs underwent meta-analysis. The pooled significant estimate of fatigue reduction was as follows: SMD, -0.50; 95% CI, -0.67 to -0.32; $P < 0.001$. The subgroup analysis based on the type of CIM intervention revealed **that the approach showing higher effects in reducing fatigue thus far is acupuncture**: SMD, -0.99; 95% CI = -1.37 to -0.62, $P < 0.001$; I2 = 84%. CIM therapies showed a significant reduction of fatigue in patients with breast cancer: SMD, -0.46; 95% CI, -0.69 to -0.23; $P < 0.001$; I2 = 82%.
Implications	CIM interventions showed effectiveness in reducing CRF. Subgroup analysis suggested some potential influencing, such as tumor type and specific CIM therapy factors, that require in-depth assessment in future research. Study protocol registration: PROSPERO CRD42020194254.

1.1.3. Choi 2022 (Breast Cancer) ☆

Choi TY, Ang L, Jun JH, Alraek T, Birch S, Lu W, Lee MS. Acupuncture for Managing Cancer-Related Fatigue in Breast Cancer Patients: A Systematic Review and Meta-Analysis. Cancers (Basel). 2022 Sep 11;14(18):4419. https://doi.org/10.3390/cancers14184419

Background	Breast cancer (BC) is the most common cancer in women and is a serious threat to women's health. Cancer-related fatigue (CRF) is a distressing symptom in BC patients during and after chemotherapy or radiation therapy that severely affects quality of life (QoL). AT is widely used for fatigue management. However, the effect of AT on CRF is still uncertain. This study aimed to evaluate the efficacy and safety of AT in the management of CRF in patients with BC.
Methods	Eleven databases were searched through June 2022. Two researchers independently performed the database search, study selection, data extraction, and risk of bias assessment. Study selection was performed based on predefined Participants, Intervention, Comparators, Outcomes, Study design (PICOS) criteria, and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were followed when reporting the results. A meta-analysis was performed according to the Cochrane systematic review method using RevMan 5.3.

Results	A total of **12 studies** including a total of **1084 participants** were included. The results showed that AT had a beneficial effect compared with sham AT (n = 256, SMD = -0.26, 95% CI [-0.51, -0.01], p = 0.04, I2 = 0%) and a long-term effect on fatigue score (n = 209, MD = -0.32, 95% CI [-0.59, -0.04], p = 0.02, I2 = 0%). Meta-analysis showed that AT had a beneficial effect compared with usual care (UC) on fatigue scores (n = 238, SMD = -0.39, 95% CI [-0.66 to -0.12], p = 0.005, I2 = 0%). Of the 12 articles, 3 articles were judged as having a low risk of bias in all domains and hence were of high quality. No serious adverse effects were identified.
Conclusions	AT is an effective and safe treatment for CRF, and AT is more effective than sham AT or UC or wait-list control (WLC). Nevertheless, the methodological quality of most of these studies was low, and the included studies/sample sizes were small, so the ability to derive decisive implications was limited. Further research is needed to confirm these findings.

1.1.4. Tan 2021 ☆

Tan JB, Wang T, Kirshbaum MN, Zhao I, Eliseeva S, Polotan MJ, Yao LQ, Huang HQ, Zheng SL. Acupoint stimulation for cancer-related fatigue: A quantitative synthesis of randomised controlled trials. Complement Ther Clin Pract. 2021 Nov;45:101490. doi

Background and purpose	This study aimed to identify the research evidence on acupoint stimulation (AS) for cancer-related fatigue (CRF) management.
Methods	Randomised controlled trials that utilised AS for CRF management were retrieved. The Cochrane Back Review Group Risk of Bias Tool was used for quality appraisal. RevMan 5.3 was used for meta-analysis.
Results	**Fifteen studies** were included. Both the overall (SMD = −0.95, p = 0.008) and sub-group (acupuncture: SMD = −1.25, p = 0.002; short-term AS: SMD = −0.95, p = 0.02; medium-term AS: SMD = −0.96, p = 0.003) analyses indicated that AS was more effective in alleviating CRF than standard treatment/care. A comparison between the true and sham AS interventions favoured the true AS for CRF management, although the difference did not reach statistical significance.
Conclusion	This study identified a promising role of AS in improving CRF. However, the study findings should be interpreted prudently due to the limited quality and sample sizes of some of the included studies.

1.1.5. Jang 2020 ☆☆☆

Jang A, Brown C, Lamoury G, Morgia M, Boyle F, Marr I, Clarke S, Back M, Oh B.. The Effects of Acupuncture on Cancer-Related Fatigue: Updated Systematic Review and Meta-Analysis. Integr Cancer Ther. 2020. [212547]. doi

Background	Several studies have identified fatigue as one of the major symptoms experienced during and after cancer treatment. However, there are limited options to manage cancer related fatigue (CRF) with pharmacological interventions. Several acupuncture studies suggested that acupuncture has a positive impact on CRF. This review aims to assess the evidence of acupuncture for the treatment of CRF.

Method	Electronic database searches were conducted on 4 English databases (Medline, PubMed, Embase, and ScienceDirect). Search keywords were; “acupuncture” and “cancer,” or “cancer related fatigue.” Studies published as full text randomized controlled trials (RCTs) in English were included. Estimates of change in fatigue cores were pooled using a random effects meta-analysis where randomized comparisons were available for true acupuncture versus sham acupuncture and true acupuncture versus usual care. The quality of original papers were assessed using the Cochrane Collaboration's tool for assessing risk of bias (ROB).
Results	**Nine RCTs** were selected for review with a total of **809 participants** and a range of 13 to 302 participants within the studies. Six RCTs reported significant improvement of CRF for the acupuncture intervention compared to the control groups. Pooled estimates suggest Brief Fatigue Inventory scores are 0.93 points lower 95% CI (-1.65, -0.20) in true acupuncture versus sham acupuncture and 2.12 points lower 95% C (-3.21, -1.04) in true acupuncture versus usual care. Six studies had low risk of bias (ROB) and 3 studies had a moderate ROB predominantly in blinding of participants, blinding of assessors and incomplete data outcomes. Among the 9 RCTs, 2 studies have reported the occurrence of minor adverse effects (spot bleeding and bruising) related to acupuncture treatment. No serious adverse reactions related to acupuncture were reported.
Conclusion	The current literature review suggests that acupuncture has therapeutic potential in management of CRF for cancer survivors. Promotion of acupuncture in cancer care to manage CRF may improve the quality of life of cancer survivors.

1.1.6. Pan 2020 (breast cancer)

Pan Yuanqing, Tang Yong, Liang Haiqian, Chen Gen, Xiping Shen, Jin Dong, Cui Qi, Qi Miaomiao. Acupuncture for Hormone Therapy-Related Side Effects in Breast Cancer Patients: A GRADE-Assessed Systematic Review and Updated Meta-Analysis. Integr Cancer Ther. 2020. [212315]. doi

Purpose	To determine the efficacy of acupuncture on the management of hormone therapy-related side effects in breast cancer patients.
Methods	Randomized controlled trials of acupuncture versus a control or placebo in breast cancer patients that examined reductions in therapy-related side effects were retrieved from PubMed, EMBASE, Web of Science, and the Cochrane Library through April 2020. Data on patient symptoms (hot flashes, fatigue, pain, stiffness, and gastrointestinal symptoms), physical capacity, cytokines, and general psychosomatic well-being were analyzed. We evaluated and analyzed the quality of all included studies with the 5.2 Cochrane Handbook standards using Stata software (version 10.0) and Revman software (version 5.2), respectively. We assessed the risk of bias using the Cochrane Risk of Bias tool and evaluated the quality of evidence using the GRADE (Grading of Recommendations, Assessment, Development, and Evaluations) approach.
Results	The pooled results suggested that **acupuncture led to moderate improvements** in hot flashes, **fatigue**, and stiffness. No significant differences were observed in pain, gastrointestinal symptoms, Kupperman index scores, Overall quality of life, tumor necrosis factor levels, and interleukin levels.
Conclusions	Evidence for outcome indicators of symptom management were downgraded by the GRADE system for inconsistency, indirectness, and imprecision in the included RCTs. Nonetheless, acupuncture is a moderately appropriate alternative therapy for hormone therapy-related side effects in breast cancer patients. However, it still lacks large-sample, multicenter, prospective RCTs. Future research should focus on standardizing comparison groups and treatment methods, be at least single-blinded, assess biologic mechanisms, have adequate statistical power, and involve multiple acupuncturists.

1.1.7. Zhao 2020

Zhao Y, Wang S, Li J, Zhou Y, Wu W, Swei Sunny H. Effectiveness and safety of traditional Chinese medical therapy for cancer-related fatigue: a systematic review and Meta-analysis of randomized controlled trials. Journal of TCM. 2020;40(5):738-748. [212636]. doi

Objective	To assess the effectiveness and safety of traditional Chinese medical therapy for cancer-related fatigue.
Methods	We systematically searched eight electronic databases up to June 2017 for randomized clinical trials of traditional Chinese medical therapy for cancer-related fatigue. Two authors independently extracted data and assessed the risk bias of the included trials using the Cochrane Handbook. Data were analyzed by RevMan 5.2 software.
Results	A total of 23 trials involving 1832 participants identified with cancer-related fatigue were included. Twenty trials reported a beneficial effect of traditional Chinese medical therapy on cancer-related fatigue. On pooling the data from Chinese herbal medicine therapy and acupuncture or moxibustion therapy, respectively, significant differences were found between experimental groups and control groups. Fatigue improvement rates showed significant differences between traditional Chinese medical therapy and control groups [odds ratio (OR), 7.62; 95% confidence interval (CI), 3.75-15.49; P < 0.000 01; and OR, 3.78; 95% CI, 2.29-6.23; P < 0.000 01). Fatigue change scores also showed significant differences between the two groups (mean difference, -0.91; 95% CI, -0.16 to -0.65; P < 0.000 01). Eleven trials demonstrated that traditional Chinese medical therapy improved the quality of life of cancer patients. No severe adverse effects occurred in traditional Chinese medical therapy groups.
Conclusion	Meta-analysis showed that Chinese medical therapy seems to be effective and safe in the treatment of cancer-related fatigue.

1.1.8. Wu 2019

Wu C, Zheng Y, Duan Y, Lai X, Cui S, Xu N, Tang C, Lu L. Nonpharmacological Interventions for Cancer-Related Fatigue: A Systematic Review and Bayesian Network Meta-Analysis. Worldviews Evid Based Nurs. 2019;16(2):102-110. [199804].

Background	Nonpharmacological interventions are the first recommendation for cancer-related fatigue, according to current guidelines. There are many forms of nonpharmacological interventions for addressing cancer-related fatigue, but the preferred means remain controversial and are not stated in the guidelines. Therefore, we evaluated the comparative effects and ranks of all major nonpharmacological interventions, according to different assessment methods, in cancer patients with fatigue.
Methods	Medline, Embase, Cochrane Library, and Allied and Complementary Medicine Database were searched for randomized controlled trials on nonpharmacological treatments for cancer-related fatigue. We assessed the trials' methodological quality using the Cochrane Risk of Bias tool. A Bayesian network meta-analysis and a comparative effects ranking were performed with Aggregate Data Drug Information System software.

Results	A total of 16,675 items were obtained from the databases, and 182 studies comprising 18,491 participants were included in the analysis. Based on the ranking probabilities, multimodal therapy and qigong ranked best with a Brief Fatigue Inventory; for a Functional Assessment of Cancer Therapy-fatigue scale, combined psychosocial therapies and bright white light therapy ranked best; for the Piper Fatigue Scale, resistance exercise and mindfulness-based stress reduction ranked best; for a multidimensional fatigue inventory, multimodal therapy and cognitive behavioral therapy (CBT) ranked best; for the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30), **acupuncture** and CBT ranked best; and for the Profile of Mood States Fatigue Subscale, multimodal therapy, qigong, aerobic exercise, and CBT ranked best. Comprehensive analysis of the results indicated that multimodal therapy, CBT, and qigong might be the optimum selections for reducing cancer-related fatigue. Most of the included studies had low risk of methodological quality problems; however, 59 studies had low methodological quality.
Linking evidence to action	Different interventions have their own sets of advantages for addressing cancer-related fatigue. These results can be utilized as evidence-based interventions for healthcare workers and patients to manage cancer-related fatigue.

1.1.9. Zhang 2018 ☆☆

Zhang Y, Lin L, Li H, Hu Y, Tian L. Effects of acupuncture on cancer-related fatigue: a meta-analysis. Support Care Cancer. 2018. 26(2):415-425. [125790].

Purpose	This study was designed to critically evaluate the effect of acupuncture on cancer-related fatigue (CRF).
Methods	Seven databases (Cochrane Library, Embase, Medline, Web of Science, CBM, Wanfang, and CNKI) were systematically reviewed from inception to November 2016 for randomized controlled trials (RCTs). Two reviewers critically and independently assessed the risk of bias using Cochrane Collaboration criteria and extracted correlated data using the designed form. All analyses were performed with Review Manager 5.
Results	Ten RCTs, including 1327 patients (acupuncture, 733; control, 594), meeting the inclusion criteria for the meta-analysis were identified. Acupuncture had a marked effect on fatigue in cancer patients, regardless of concurrent anti-cancer treatment, particularly among breast cancer patients. The meta-analysis also indicated that acupuncture could significantly mitigate CRF compared with sham acupuncture or usual care. Acupuncture for 20-30 min/session three times/week for two or three weeks, twice weekly for two weeks and weekly for six weeks, and weekly for six weeks had substantial effects on CRF. Six RCTs reported the occurrence of adverse events, whereas five reported none. The remaining study reported some manageable events, including spot bleeding and bruising.
Conclusions	Acupuncture is effective for CRF management and should be recommended as a beneficial alternative therapy for CRF patients, particularly for breast cancer patients and those currently undergoing anti-cancer treatment.

1.1.10. Duong 2017 Ø

Duong N, Davis H, Robinson PD, Oberoi S, Cataudella D, Culos-Reed SN, Gibson F, Götte M, Hinds P, Nijhof SL, Tomlinson D, van der Torre P, Ladas E, Cabral S. Mind and body practices for fatigue reduction in patients with cancer and hematopoietic stem cell transplant recipients: A systematic review and meta-analysis. Crit Rev Oncol Hematol. 2017;120:210-216. [46451].

Purpose	To determine whether non-physical activity mind and body practices reduce the severity of fatigue in patients with cancer or hematopoietic stem cell transplant (HSCT) recipients compared to control interventions.
Methods	We included randomized trials which compared non-physical activity mind and body practices compared with control interventions for the management of fatigue in cancer and HSCT patients.
Results	Among 55 trials (4975 patients), interventions were **acupuncture or acupressure (n=12)**, mindfulness (n=11), relaxation techniques (n=10), massage (n=6), energy therapy (n=5), energizing yogic breathing (n=3) and others (n=8). When combined, all interventions significantly reduced fatigue severity compared to all controls (standardized mean difference -0.51, 95% confidence interval -0.73 to -0.29). More specifically, mindfulness and relaxation significantly reduced fatigue severity.
Conclusions	Mindfulness and relaxation were effective at reducing fatigue severity in patients with cancer and HSCT recipients. Future studies should evaluate how to translate these findings into clinical practice across different patient groups.
Acupuncture	Acupuncture, acupressure, massage, energy therapy and yogic breathing were not effective.

1.1.11. Lau 2016 ☆☆

Lau CH, Wu X, Chung VC et al. Acupuncture and Related Therapies for Symptom Management in Palliative Cancer Care: Systematic Review and Meta-Analysis. Medicine (Baltimore). 2016 Mar; 95(9):e2901.

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 therapies 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, n = 111, pooled standard mean difference: 0.75, 95% confidence interval: 0.36-1.13).
Conclusions	**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. **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.

1.1.12. Zeng 2014 ☆

Zeng Y, Luo T, Finnegan-John J, Cheng As. Meta-analysis of randomized controlled trials of acupuncture for cancer-related fatigue. Integr Cancer Ther. 2014. 13(3):193-200. [160394].

Background	Fatigue is a distressing and pervasive problem for people with cancer. In recent years, acupuncture has gained increasing attention among researchers as an alternative management strategy for cancer-related fatigue (CRF). This review aimed to evaluate the effectiveness of acupuncture for CRF.
Method	Five databases (Medline, CINAHL, Scopus, the Cochrane Library, and CAJ Full-text Database) were searched up to May 2013. Randomized controlled trials (RCTs) of acupuncture for the treatment of CRF were considered for inclusion.
Result	Seven RCTs were included for meta-analysis, involving a total of 689 subjects. Three studies compared acupuncture with sham acupuncture for CRF with follow-up at 10 weeks; the standardized mean difference (SMD) for general CRF change values was -0.82 (95% confidence interval [CI] = -1.90 to 0.26). When acupuncture plus education intervention was compared with usual care, there was a statistically significant difference for the change score of general CRF (SMD = -2.12; 95% CI = -3.21 to -1.03). The SMD for general CRF change scores between acupuncture with no treatment or wait-list control was -1.46 (95% CI = -3.56 to 0.63). Finally, the SMD for general CRF change scores between acupuncture with acupressure or self-acupuncture was -1.12 (95% CI = -3.03 to 0.78). Three trials reported data for general quality of life and functioning status, reporting enough data for statistical pooling but showing no statistically significant difference (: score = 1.15, : = .25, SMD = 0.99, 95% CI = -0.70 to 2.68 and : score = 1.13, : = .26, SMD = 1.38, 95% CI = -1.02 to 3.79, respectively). The 2 statistics of all statistically pooled data were higher than 50%, indicating heterogeneity between the trials.
Conclusion	There were 4 sets of comparison for the effectiveness of acupuncture for CRF; statistical pooling of the reduction in CRF from baseline to follow-up showed in favor of acupuncture. However, 3 sets of comparison for the pooled estimates of effect sizes had no statistical significance. Although one set of comparison (acupuncture plus education interventions vs usual care) had statistically significant differences, it is unclear whether this pooled positive outcome is attributable to the effects of acupuncture or to the education intervention. In addition, the duration of follow-up in these included trials was up to 10 weeks, and some RCTs had methodological flaws. Further rigorously designed RCTs adhering to acceptable standards of trial methodology are required to determine the effectiveness of acupuncture and its long-term effects on CRF.

1.1.13. Ling 2014 ☆

Ling WM, Lui LY, So WK, Chan K. Effects of acupuncture and acupressure on cancer-related fatigue: a systematic review. Oncol Nurs Forum. 2014;41(6):581-92. [187831].

Purpose/Objectives	To critically examine the evidence for acupuncture and acupressure in the management of cancer-related fatigue (CRF) in adult patients with cancer.
Data Sources	18 databases were searched for randomized, controlled trials published in English and Chinese through April 2014.
Data Synthesis	Given the heterogeneity of data, meta-analysis was not conducted. A six-step thematic analysis method was used to synthesize the results.
Conclusions	Although results are inconclusive, acupuncture and acupressure tend to be effective in relieving CRF, with the former producing a greater improvement. Future research is recommended to contribute further evidence. IMPLICATIONS FOR NURSING: Nurses should know about the relative effectiveness of acupuncture and acupressure in the management of CRF to educate and support their patients.

1.1.14. He 2013 ☆

He XR, Wang Q, Li PP. Acupuncture and moxibustion for cancer-related fatigue: a systematic review and meta-analysis. Asian Pac J Cancer Prev. 2013. 14(5):3067-74. [160317].

Background	Faced with highly prevalent and recalcitrant cancer-related fatigue (CRF), together with the absence of any official guidelines on management, numerous groups have been striving to seek and test alternative therapies including acupuncture and moxibustion. However, different patients have various feedbacks, and the many clinical trials have given rise to varied conclusions. In terms of the therapeutic effect of acupuncture and moxibustion, there exist vast inconsistencies.
Objective	The aim of the study was to evaluate the auxiliary effectiveness of acupuncture and moxibustion in the treatment of CRF, and to provide more reliable evidence to guide clinical practice. Methods: Randomized controlled trials (RCTs) published before December 2012 were all aggregated, focusing on evaluation of acupuncture or moxibustion for CRF. The quality of the included studies was assessed basing on Cochrane handbook 5.1.0, and the available data were analyzed with RevMan software (version 5.2.0). Descriptive techniques were performed when no available data could be used.
Results	A total of 7 studies involving 804 participants were eligible. With real acupuncture versus sham acupuncture, subjects receiving true acupuncture benefited more in the reduction of fatigue. With real acupuncture versus acupressure or sham acupressure, fatigue level appeared 36% improved in the acupuncture group, but 19% in the acupressure group and only 0.6% with sham acupressure. When real acupuncture plus enhanced routine care was compared with enhanced routine care, the combination group improved mean scores for general fatigue, together with physical and mental fatigue. With real acupuncture versus sham acupuncture or wait list controls, the real acupuncture group displayed significant advantages over the wait list controls at 2 weeks for fatigue improvement and better well-being effects at 6 weeks. When moxibustion plus routine care was compared with routine care alone, the meta-analyses demonstrated the combination had a relatively significant benefit in improving severe fatigue and QLQ-C30.
Conclusion	Up to the search date, there exist few high quality RCTs to evaluate the effect of acupuncture and moxibustion, especially moxibustion in English. Yet acupuncture and moxibustion still appeared to be efficacious auxiliary therapeutic methods for CRF, in spite of several inherent defects of the included studies. Much more high-quality studies are urgently needed.

1.1.15. Posadzki 2013 Ø

Posadzki P, Moon TW, Choi TY, Park TY, Lee MS, Ernst E. Acupuncture for cancer-related fatigue: a systematic review of randomized clinical trials. Support Care Cancer. 2013. 21(7): 2067-63. [155986].

Purpose	Managing cancer-related fatigue (CRF) is an important element of the palliative care of cancer patients. The aim of this systematic review was to critically evaluate the effectiveness of acupuncture (AT) or electroacupuncture (EA) for CRF.
Methods	Fourteen databases were searched from their respective inception to November 2012. Randomized clinical trials (RCTs) of AT or EA for the treatment of CRF were considered for inclusion. The risk of bias/methodological quality was assessed using the method suggested by the Cochrane Collaboration.

Results	Seven RCTs met the eligibility criteria. Most were small pilot studies with serious methodological flaws. Four of the RCTs showed effectiveness of AT or AT in addition to usual care (UC) over sham AT, UC, enhanced UC, or no intervention for alleviating CRF. Three RCTs showed no effect of AT/EA over sham treatment.
Conclusion	Overall, the quantity and quality of RCTs included in the analysis were too low to draw meaningful conclusions. Even in the positive trials, it remained unclear whether the observed outcome was due to specific effects of AT/EA or nonspecific effects of care. Further research is required to investigate whether AT/EA demonstrates specific effects on CRF.

1.1.16. Finnegan-John 2013 ☆

Finnegan-John J, Molassiotis A, Richardson A, Ream E. A systematic review of complementary and alternative medicine interventions for the management of cancer-related fatigue. Integr Cancer Ther. 2013. apr 30. [159359].

Background	Fatigue, experienced by patients during and following cancer treatment, is a significant clinical problem. It is a prevalent and distressing symptom yet pharmacological interventions are used little and confer limited benefit for patients. However, many cancer patients use some form of complementary and alternative medicine (CAM), and some evidence suggests it may relieve fatigue.
Objective	A systematic review was conducted to appraise the effectiveness of CAM interventions in ameliorating cancer-related fatigue.
Method	Systematic searches of biomedical, nursing, and specialist CAM databases were conducted, including Medline, Embase, and AMED. Included papers described interventions classified as CAM by the National Centre of Complementary and Alternative Medicine and evaluated through randomized controlled trial (RCT) or quasi-experimental design. Twenty studies were eligible for the review, of which 15 were RCTs. Forms of CAM interventions examined included acupuncture, massage, yoga, and relaxation training.
Results	The review identified some limited evidence suggesting hypnosis and ginseng may prevent rises in cancer-related fatigue in people undergoing treatment for cancer and acupuncture and that biofield healing may reduce cancer-related fatigue following cancer treatments. Evidence to date suggests that multivitamins are ineffective at reducing cancer-related fatigue. However, trials incorporated within the review varied greatly in quality; most were methodologically weak and at high risk of bias.
Conclusion	Consequently, there is currently insufficient evidence to conclude with certainty the effectiveness or otherwise of CAM in reducing cancer-related fatigue. The design and methods employed in future trials of CAM should be more rigorous; increasing the strength of evidence should be a priority.

1.1.17. Sood 2007 Ø

Sood A, Barton DL, Bauer BA, Loprinzi CL. A critical review of complementary therapies for cancer-related fatigue. Integr Cancer Ther. 2007. 6(1):8-13. [144510].

Purpose	To review the available literature on the use of complementary and alternative medicine (CAM) treatments for cancer-related fatigue with an aim to develop directions for future research.
Methods	PubMed, EMBASE, CINAHL, PsycINFO, and SPORTDiscus were searched for relevant studies. Original clinical trials reporting on the use of CAM treatments for cancer-related fatigue were abstracted and critically reviewed.

Results	CAM interventions tested for cancer-related fatigue include acupuncture, aromatherapy, adenosine triphosphate infusions, energy conservation and activity management, healing touch, hypnosis, lectinstandardized mistletoe extract, levocarnitine, massage, mindfulness-based stress reduction, polarity therapy, relaxation, sleep promotion, support group, and Tibetan yoga. Several of these interventions seem promising in initial studies.
Conclusion	Currently, insufficient data exist to recommend any specific CAM modality for cancer-related fatigue. Therefore, potentially effective CAM interventions ready for further study in large, randomized clinical trials (eg, acupuncture, massage, levocarnitine, and the use of mistletoe) should be pursued. Other interventions should be tested in well-designed feasibility and phase II trials.

1.2. Special Acupuncture Techniques

1.2.1. Comparison of acupuncture techniques

1.2.1.1. Tian 2023

Tian H, Chen Y, Sun M, Huang L, Xu G, Yang C, Luo Q, Zhao L, Wei Z, Liang F. Acupuncture therapies for cancer-related fatigue: A Bayesian network meta-analysis and systematic review. Front Oncol. 2023 Mar 27;13:1071326. https://doi.org/10.3389/fonc.2023.1071326

Background	Cancer-related fatigue (CRF) is one of the most commonly reported symptoms impacting cancer survivors. This study evaluated and compared the effectiveness and safety of acupuncture treatments for CRF.
Methods	We searched PubMed, Embase, Web of Science, Cochrane Library, China Biology Medicine China National Knowledge Infrastructure, China Science and Technology Journal Database, and WanFang Database from inception to November 2022 to identify eligible randomized controlled trials (RCTs) comparing acupuncture treatments with sham interventions, waitlist (WL), or usual care (UC) for CRF treatment. The outcomes included the Cancer Fatigue Scale (CFS) and Pittsburgh Sleep Quality Index (PSQI), and pair-wise and Bayesian network meta-analyses were performed using STATA v17.0.
Results	In total, **34 randomized controlled trials** featuring **2632 participants** were included. In the network meta-analysis, the primary analysis using CFS illustrated that point application (PA) + UC (standardized mean difference [SMD] = -1.33, 95% CI = -2.02, -0.63) had the highest probability of improving CFS, followed by manual acupuncture (MA) + PA (SMD = -1.21, 95% CI = -2.05, -0.38) and MA + UC (SMD = -0.80, 95% CI = -1.50, -0.09). Moreover, the adverse events of these interventions were acceptable.
Conclusion	This study demonstrated that acupuncture was effective and safe on CRF treatment. However, further studies are still warranted by incorporating more large-scale and high-quality RCTs.

1.2.2. Moxibustion

1.2.2.1. Bae 2024

Bae HR, Kim EJ, Ahn YC, Cho JH, Son CG, Lee NH. Efficacy of Moxibustion for Cancer-Related Fatigue in Patients with Breast Cancer: A Systematic Review and Meta-Analysis. Integr Cancer Ther. 2024 Jan-Dec;23:15347354241233226. https://doi.org/10.1177/15347354241233226

Introduction	Breast cancer is the most commonly diagnosed cancer worldwide, and most patients experience fatigue. However, there are no effective treatments for cancer-related fatigue (CRF). Several randomized controlled trials (RCTs) have suggested that moxibustion improves CRF. We conducted a systematic review and meta-analysis to compare the differences in fatigue scale scores, quality of life, and clinical efficacy in patients with breast cancer who developed CRF and did versus did not receive moxibustion.
Methods	RCTs were searched in 7 databases using a standardized search method from database inception to March 2023, and RCTs that met the inclusion criteria were selected.
Results	Among 1337 initially identified RCTs, **10 RCTs involving 744 participants** were selected for this study. The meta-analysis involved assessment of the revised Piper Fatigue Scale scores, Cancer Fatigue Scale scores, Karnofsky Performance Scale scores, Athens Insomnia Scale scores, clinical efficacy, and Qi deficiency syndrome scale scores. Compared with the control, moxibustion was associated with significantly better Piper Fatigue Scale scores ($P < 0.0001$), quality of life [Karnofsky Performance Scale scores ($P < 0.0001$)], clinical efficacy ($P = 0.0007$), and Qi deficiency syndrome scale scores ($P = 0.02$).
Conclusions	Moxibustion improves CRF in patients with breast cancer. The efficacy of moxibustion should be further examined by high-quality studies in various countries with patients subdivided by their breast cancer treatment status.

1.2.2.2. Wang 2023

Wang XQ, Qiao Y, Duan PB, Du SZ, Yang LH. Efficacy and safety of moxibustion on cancer-related fatigue: a systematic review and meta-analysis of randomized controlled trials. Support Care Cancer. 2023 Aug 7;31(9):508. https://doi.org/10.1007/s00520-023-07977-z

Objective	The goal of this research was to review the literature from randomized controlled trials (RCTs) on the impacts of moxibustion on cancer-related fatigue (CRF) as well as provide credible evidence to guide clinical practice.
Methods	Three English electronic medical databases (PubMed, Embase, and the Cochrane Library) and two Chinese databases (China National Knowledge Infrastructure and Wanfang) were searched. Only randomized controlled trials on the effect of moxibustion on CRF were included in this systematic review. Study selection, data extraction, and validation were all carried out independently by two reviewers. The revised Cochrane Risk of Bias tool was used to assess the quality of the RCTs (RoB 2.0). The Grading of Recommendations Assessment, Development and Evaluation (GRADE) system was applied to assess effect sizes in individual RCTs and pooled effect sizes in meta-analyses. Data were meta-analyzed using Stata (version 14.0).
Results	In a random-effects meta-analysis of **24 RCTs with 1894 participants**, the aggregated standardized mean difference (SMD) revealed a statistically significant association between moxibustion and alleviation from cancer-related fatigue (SMD = - 1.66, 95% CI = - 2.05, - 1.28, p = 0.000). Pooled results, however, show significant heterogeneity ($I2 = 92.5\%$), and the evidence is insufficient to determine whether this association varies systematically by measuring tools and moxibustion modalities. Furthermore, evidence ranging from very low to low showed that moxibustion had an immediate positive effect on patients with CRF.
Conclusion	Moxibustion may have a therapeutic effect on cancer-related fatigue. However, further large-scale, multicenter, high-quality RCTs on moxibustion for fatigue relief and safety are still needed because of the handful of studies included and the low methodological quality.

1.2.2.3. Ma 2019

Ma Hai-Li , Lou Li-Fang, Sun Zhi-Hong, Lv Bao-Liang, Yang Bing. The effectiveness of moxibustion for cancer-related fatigue: An updated systematic review and meta-analysis European Journal of Integrative Medicine. 2019;30. [202229]. The effectiveness of moxibustion for cancer-related fatigue: An updated systematic review and meta-analysis European Journal of Integrative Medicine. 2019;30. [202229].

Introduction	Cancer-related fatigue is a common and debilitating symptom in cancer patients. Moxibustion is frequently used in cancer and its complications. However, evidence that moxibustion can improve cancer-related fatigue is insufficient.
Methods	We systematically reviewed existing clinical randomized controlled trials to investigate whether moxibustion can improve cancer-related fatigue. Methods We used three methods to search for relevant studies. Thirteen electronic databases were searched. Adult patients diagnosed with cancer were included in our study. Intervention group patients received moxibustion only or a combination of moxibustion with other co-interventions. Patients in the control group used no moxibustion intervention. The primary outcome was fatigue. RevMan version 5.3 was used to analyze all data. This study was reported based on the PRISMA statement.
Results	A total of **22 studies with 1628 cancer patients** were included in this review. The included studies had methodological limitations of varying degrees. The results of the meta-analysis indicate that moxibustion can significantly reduce fatigue regardless of the type—sensory fatigue, behavioral fatigue, affective meaning fatigue, cognitive fatigue, physical fatigue, or total score of fatigue.
Conclusions	The study findings suggest that moxibustion can improve cancer-related fatigue and most aspects of quality of life (except for economic difficulty and insomnia). Moxibustion is relatively safe as treatment for cancer patients. Owing to the small number, short intervention duration and methodological drawbacks of the included studies, more rigorously designed large randomized controlled trials with satisfactory intervention durations and follow-up periods are required to provide more reliable evidence.

1.2.2.4. Lee 2014 Ø

Lee S, Jerng UM, Liu Y, Kang JW, Nam D, Lee JD.The effectiveness and safety of moxibustion for treating cancer-related fatigue: a systematic review and meta-analyses.Support Care Cancer. 2014;22(5):1429-40. [160227].

Objectifs	Among cancer patients, cancer-related fatigue (CRF) is one of the most common symptoms and adversely affects physical ability and quality of life even several years after treatment. This study aims to evaluate the current evidence for moxibustion in patients with CRF.
Méthodes	Eighteen databases were searched from their inception to April 2013. All randomized controlled trials (RCTs) of moxibustion for treating CRF without language restriction were considered for inclusion. The risk of bias and reporting quality of each study were assessed using the Cochrane risk of bias tool, Consolidated Standards of Reporting Trials (CONSORT), and Revised Standards for Reporting Interventions in Clinical Trials of Acupuncture (STRICTA). Risk ratio (RR) or mean difference (MD) was used to measure the treatment effect with 95 % confidence intervals (CIs) in a random effects model.

Résultats	**Four RCTs with a total of 374 subjects** were included for the review. These four studies compared moxibustion plus routine care with routine care alone. Most studies were determined to have a moderate to high risk of bias with low reporting quality. An indirect moxa stick was used in two studies, an indirect ginger cake-separated moxa was used in one study, and in one remaining study, both moxibustion methods were used. Meta-analysis showed the favorable effects of moxibustion on the response rate (RR, 1.73; 95 % CI, 1.29 to 2.32; p = .0003; heterogeneity, I 2 = 15 %, p = .32). Burning with a mild blister after moxibustion was reported in one study.
Conclusions	Because of a high risk of bias and low reporting quality of the studies included in this review, **it is difficult to draw the conclusion that moxibustion is an effective and safe treatment for patients with CRF**. Further rigorous research will be necessary to evaluate whether moxibustion has beneficial effects on CRF.

1.2.3. Acupressure

1.2.3.1. Chou 2022

Chou HC, Tsai HY, Sun TC, Lin MF. [The Effectiveness of Acupressure in Reducing Cancer-Related Fatigue: A Systematic Review and Meta-Analysis]. Hu Li Za Zhi. 2022 Aug;69(4):75-87. Chinese. https://doi.org/10.6224/JN.202208_69(4).10

Background	Acupressure is one of the recommended non-pharmacologic treatments for cancer-related fatigue (CRF) according to the National Comprehensive Cancer Network guidelines. However, few systematic review or meta-analysis studies have focused on the effect of acupressure on CRF.
Purpose	The purpose of this study was to examine the effectiveness of acupressure in reducing CRF and to identify the effective acupoints and frequencies of acupressure treatments.
Methods	The search and screening procedures were conducted in accordance with PRISMA 2009 guidelines. The search database included Embase, CINAHL, Cochrane Library, MEDLINE and Google Scholar. RoB 2.0 and ROBINS-I were used as appraisal tools. The statistical analysis, including effect size estimation, was computed using RevMan 5.4.
Results	**Twelve studies** (15 sets of data) were included in the review and analysis. **Nine hundred sixty patients** with cancer who were currently undergoing or had completed treatment were enrolled as participants and received different levels of acupressure. The result showed the overall effect size of CRF in reducing acupressure to be SMD= -0.77, 95% CI [-0.90, -0.65]. In the subgroup analysis, the effect size of auricular acupressure was SMD= -0.98, 95% CI [-1.25, -0.71] and the body acupressure effect size was SMD= -0.70, 95% CI [-0.84, -0.56].
Conclusions / implications for practice	Based on the results of this systematic review, acupressure may be applied to the body acupoints Hegu (LI4), Zusanli (ST36), and Sanyinjiao (SP6) once daily for 1-3 minutes each and to the auricular acupoints shenmen and subcortex once daily for 3 minutes each to effectively reduce cancer-related fatigue.

2. Overview of Systematic Reviews

2.1. Choi 2022

Choi TY, Ang L, Jun JH, Alraek T, Lee MS. Acupuncture and Moxibustion for Cancer-Related Fatigue: An

Overview of Systematic Reviews and Meta-Analysis. Cancers (Basel). 2022 May 10;14(10):2347. https://doi.org/10.3390/cancers14102347

Background	Although acupuncture (AT) is used in the treatment of CRF, the evidence from different systematic reviews (SRs) of AT has not yet been comprehensively evaluated. Moxibustion, which is a treatment method that is well established within Traditional East Asian Medicine, applies the heat of burning herbs towards or onto special points on the skin. Commonly, the herb Artemisia vulgaris, is used. It has been used for palliative cancer care, as well as for CRF.
Methods	The aim of this overview was to evaluate the efficacy of AT and moxibustion in the management of CRF. Eleven databases were searched through for studies that were published from their dates of inception to February 2022. The study selection, the data extraction, and the assessment were performed independently by two researchers. The methodological and report quality were assessed by using the Assessment of Multiple Systematic Reviews-2 (AMSTAR-2) tool. The evidence quality was evaluated by using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) system.
Results	**Fifteen SRs** on AT (n = 10) and moxibustion (n = 5) treatments for CRF were included, and they include 169 randomized controlled trials and 14,392 participants. All of the SRs that were evaluated by the AMASTAR-2 had more than one deficiency, and so all of the SRs were rated as either low or critically low. For the GRADE, 18 outcomes were rated as very-low-quality evidence, 13 as low-quality evidence, 3 as moderate-quality evidence, and 0 as high-quality evidence. Most of the SRs reached the potential benefits of AT for CRF. No serious adverse effects were identified.
Conclusion	In conclusion, the evidence suggests that, despite the advantages of AT in terms of the improvement in and the safety of the treatment of CRF, the methodological quality of most of these studies is low, which limits our ability to draw definitive meanings. Further research of high quality is needed in order to confirm these findings.

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) 2024 ⊕

Bower JE, Lacchetti C, Alici Y, Barton DL, Bruner D, Canin BE, Escalante CP, Ganz PA, Garland SN, Gupta S, Jim H, Ligibel JA, Loh KP, Peppone L, Tripathy D, Yennu S, Zick S, Mustian K. Management of Fatigue in Adult Survivors of Cancer: ASCO-Society for Integrative Oncology Guideline Update. J Clin Oncol. 2024 May 16:JCO2400541. https://doi.org/10.1200/JCO.24.00541

Recommendations During Active Cancer Treatment. 2.5. Clinicians may recommend **acupressure** to manage symptoms of cancer-related fatigue in adults who have completed cancer treatment (Evidence Quality: low, Strength of Recommendation: conditional) . No recommendation. There is insufficient or inconclusive evidence to make recommendations for or against acceptance and commitment (ACT)–based or attention-based interventions, **acupuncture**, bright light therapy, ginseng, massage, mistletoe, or omega fatty acids, psychoeducational interventions, self-management health app, tai chi or qigong to reduce the severity of cancer-related fatigue in adults who have completed cancer treatment (Evidence Quality: Insufficient. Strength of Recommendation: No Recommendation for or against).
Recommendations After Active Cancer Treatment. 2.5. Clinicians may recommend **acupressure** to manage symptoms of cancer-related fatigue in adults who have completed cancer treatment (Evidence Quality: low, Strength of Recommendation: conditional). 2.6. Clinicians may recommend **moxibustion** to manage symptoms of cancer-related fatigue in adults who have completed cancer treatment (Evidence Quality: low, Strength of Recommendation: conditional). No recommendation. There is insufficient or inconclusive evidence to make recommendations for or against acceptance and commitment (ACT)–based or attention-based interventions, **acupuncture**, bright light therapy, ginseng, massage, mistletoe, or omega fatty acids, psychoeducational interventions, selfmanagement health app, tai chi or qigong to reduce the severity of cancer-related fatigue in adults who have completed cancer treatment (Evidence Quality: Insufficient. Strength of Recommendation: No Recommendation for or against)

3.2. 6th and 7th International consensus guidelines for the management of advanced breast cancer 2024 ⊕

Cardoso F, Paluch-Shimon S, Schumacher-Wulf E, Matos L, Gelmon K, Aapro MS, Bajpai J, Barrios CH, Bergh J, Bergsten-Nordström E, Biganzoli L, Cardoso MJ, Carey LA, Mac Gregor MC, Chidebe R, Cortés J, Curigliano G, Dent RA, El Saghir NS, Eniu A, Fallowfield L, Francis PA, Franco Millan SX, Gilchrist J, Gligorov J, Gradishar WJ, Haidinger R, Harbeck N, Hu X, Kaur R, Kiely B, Kim SB, Koppikar S, Kuper-Hommel MJJ, Lecouvet FE, Mason G, Mertz SA, Mueller V, Myerson C, Neciosup S, Offersen BV, Ohno S, Pagani O, Partridge AH, Penault-Llorca F, Prat A, Rugo HS, Senkus E, Sledge GW, Swain SM, Thomssen C, Vorobiof DA, Vuylsteke P, Wiseman T, Xu B, Costa A, Norton L, Winer EP. 6th and 7th International consensus guidelines for the management of advanced breast cancer (ABC guidelines 6 and 7). Breast. 2024 May 28;76:103756. https://doi.org/10.1016/j.breast.2024.103756

Acupuncture may help against chemotherapy-induced nausea and vomiting, fatigue and hot flushes. (Level of Evidence 1/ b; Consensus 100%)

3.3. National Cancer Comprehensive Network (NCCN, USA) 2022 ⊕

NCCN Guidelines for Supportive Care: Cancer Related-Fatigue Version 2.2022. National Comprehensive Cancer Network. 2022;:68P. [160525].
https://www.nccn.org/professionals/physician_gls/pdf/fatigue.pdf

Recommendation : acupuncture.

3.4. 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/leitlinien/komplementaermedizin/

11.3.1.6. *Fatigue*. Acupuncture/acupressure. Recommendation strength: Can. Patient context: Oncological patients.

3.5. National Health Service, Pallaborative North West (NHS, PNW, UK) 2021 ⊕

McDougall A, Monnery D, Firth K, Benson S, Hynes J, Buckle R, Giles R, Coyle S. Guideline for the Assessment and Management of Fatigue in Patients with Life Limiting Illness. Pallaborative North West. 2021. [223628]. https://drive.google.com/file/d/1iFraYK1xKdYsr46kHDnwtoBrI6sTIrli/view

Acupuncture/Acupressure [Level 1-]. Acupuncture and auricular acupressure can improve fatigue scores for general fatigue, physical fatigue, reduced physical activity and motivation28. Patients may also experience a reduction in pain, sleep disturbance and interference with activities of daily living.29 [Level 1-].Acupuncture points can include:LI4, TE5, ST36, SP6, LR3, GU20.
Section 6: Standards. Patients with fatigue should be offered non-pharmacological approaches. Interventions may include education, exercise, acupuncture/acupressure. [Grade B]

3.6. Society for Immunotherapy of Cancer (SITC) 2021 ⊕

Galsky MD, Balar AV, Black PC, Campbell MT, Dykstra GS, Grivas P, Gupta S, Hoimes CJ, Lopez LP, Meeks JJ, Plimack ER, Rosenberg JE, Shore N, Steinberg GD, Kamat AM. Society for Immunotherapy of Cancer (SITC) clinical practice guideline on immunotherapy for the treatment of urothelial cancer. J Immunother Cancer. 2021;9(7):e002552. [220075]. doi

Non-pharmaceutical strategies such as exercise, psychological interventions, energy conservation and monitoring, and **acupuncture** are more strongly supported by clinical trial results.

3.7. Association Francophone des Soins Oncologiques de Support (AFSOS) 2020 ⊕

Association Francophone des Soins Oncologiques de Support (AFSOS). Fiches Référentiels : Fatigue et cancer. MAJ 2020 doi

Intervention Non Médicamenteuse. • Acupuncture : réduction modérée de la fatigue liée au cancer, principalement dans le cas du cancer du sein et pendant les traitements

3.8. European Society for Medical Oncology (ESMO, Europe) 2020 ∅

Fabi A, Bhargava R, Fatigoni S, Guglielmo M, Horneber M, Roila F, Weis J, Jordan K, Ripamonti CI; ESMO Guidelines Committee. Cancer-related fatigue: ESMO Clinical Practice Guidelines for diagnosis and treatment. Ann Oncol. 2020;31(6):713-23. [170938]. doi

Concerning the use of acupuncture, the panel has not reached a consensus: for three panel members, it could be an option [II, C], for the other six panel members, it cannot be recommended [II, D].

3.9. National Cancer Comprehensive Network (NCCN, USA) 2020 ⊕

NCCN Guidelines for Supportive Care : Cancer related Fatigue version 2.2020. National Cancer Comprehensive Network. 2020. 65P. doi

Fatigue. Five systematic reviews suggest that acupuncture and acupressure may have beneficial properties, though the studies acknowledge that a paucity of data makes it difficult to definitively evaluate the benefits. Positive effects of acupuncture on fatigue have been reported in small samples but need to be confirmed in larger RCTs.These small trials were conducted during active non-palliative radiation therapy, and during and after chemotherapy treatment.

3.10. National Cancer Comprehensive Network (NCCN, USA) 2018 ⊕

NCCN Guidelines for Supportive Care : Cancer related Fatigue. National Cancer Comprehensive Network. 2018. 64P. [189904].

Fatigue. Four systematic reviews suggest that acupuncture and acupressure may have benefital properties, though the studies acknowledge that a paucity of data makes it difficult to definitively evaluate the benefits. Positive effects of acupuncture on fatigue have been reported in small samples but need to be confirmed in larger RCTs. These small trials were conducted during active non-palliative radiation therapy and both during and after chemotherapy treatment

3.11. Arbeitsgemeinschaft Gynäkologische Onkologie (AGO, Allemagne) 2018 ⊕

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

Acupuncture in order to improve Fatigue. Level of evidence 1a (systematic Review), grade of evidence (B), AGO recommendation grade (+) This examination or therapeutic intervention is for the patient of limited benefit and can be performed.

3.12. European School of Oncology (ESO) and the European Society for Medical Oncology (ESMO) 2018 ⊕

Cardoso F, Senkus E, Costa A, Papadopoulos E, Aapro M, André F et al. 4th ESO-ESMO International Consensus Guidelines for Advanced Breast Cancer (ABC 4)†. Ann Oncol. 2018;29(8):1634-57. [196973].

Acupuncture may help against induced nausea and vomiting, **fatigue** and hot flashes;

3.13. American Cancer Society / American Society of Clinical Oncology (ASCO, USA) 2017 ⊕

Lyman GH, Greenlee H, Bohlke K, Bao T, DeMichele AM, Deng GE, Fouladbakhsh JM, Gil B, Hershman DL, Mansfield S, Mussallem DM, Mustian KM, Price E, Rafte S, Cohen L. Integrative Therapies During and After Breast Cancer Treatment: ASCO Endorsement of the SIO Clinical Practice Guideline. J Clin Oncol. 2018;Jun 11. [155475].

Fatigue. Recommendations: Acupuncture and yoga can be considered for improving post-treatment fatigue. (Grade C)

3.14. Society for Integrative Oncology (SIO, USA) 2017 ⊕

Greenlee H, DuPont-Reyes MJ, Balneaves LG et al. Clinical practice guidelines on the evidence-based use of integrative therapies during and after breast cancer treatment. CA Cancer J Clin. 2017 May 6;67(3):194-232.

Fatigue. Recommendations: Acupuncture and yoga can be considered for improving post-treatment fatigue. (Strenght of Evidence Grade: C)

3.15. Alberta Health Service (AHS, Canada) 2017 ⊕

Cancer-Related Fatigue. Clinical Practice Guideline Alberta Health Services. 2017. 15P. [195989].

Fatigue. Fatigue. There is insufficient evidence on the use of acupuncture for the patients with cancer-related fatigue in active treatment; acupuncture can be considered for treatment of fatigue after completion of cancer treatment.)

3.16. BC Centre for Palliative Care (Canada) 2017 ⊕

B.C. Inter-Professional Palliative Symptom Management Guidelines. BC Centre for Palliative Care. 2017:304P. [219379]. URL

|Fatigue: Acupuncture - benefits cancer-related fatigue and quality of life. Little evidence for acupuncture effect on fatigue in the palliative, chronic disease population.|

3.17. National Comprehensive Cancer Network (NCCN, USA) 2017 Ø

National Comprehensive Cancer Network. Clinical Practice Guidelines in Oncology (NCCN guidelines): Cancer-Related Fatigue. Version 2.2017. [57750].

Fatigue. Four systematic reviews suggest that acupuncture and acupressure may have benefital properties, though the studies acknowledge that a paucity of data makes it difficult to definitively evaluate the benefits. Positive effects of acupuncture on fatigue have been reported in small samples but need to be confirmed in larger RCTs. These small trials were conducted during active non-palliative radiation therapy and both during and after chemotherapy treatment

3.18. Canadian Association of Psychosocial Oncology (CAPO, Canada) 2015 Ø

Screening and Assessment – Cancer-Related Fatigue in Adults with Cancer. Canadian Association of Psychosocial Oncology. 2015. 253P. [180922].

Patients should be advised that insufficient evidence is available to advise seeking Acupuncture for the treatment of fatigue. *Level of Evidence*: Moderate. *Strength of Recommendation*: Weak.

3.19. Society for Integrative Oncology (SIO, USA) 2014 ⊕

Greenlee H, Balneaves LG, Carlson LE, Cohen M, Deng G, Hershman D, Mumber M, Perlmutter J, Seely D, Sen A, Zick SM, Tripathy D; Society for Integrative Oncology. Clinical practice guidelines on the use of integrative therapies as supportive care in patients treated for breast cancer. J Natl Cancer Inst Monogr. 2014;50:346-58. [167074].

Fatigue. Recommendations: Acupuncture can be considered for the treatment of fatigue after the completion of cancer treatments. Strength of evidence: C

3.20. 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)

Fatigue : acupuncture (niveau de preuve HAS : B)

3.21. American Society of Clinical Oncology (ASCO, USA) 2014 ⊕

Bower JE, Bak K, Berger A, Breitbart W, Escalante CP, Ganz PA, Schnipper HH, Lacchetti C, Ligibel JA,

Lyman GH, Ogaily MS, Pirl WF, Jacobsen PB; American Society of Clinical Oncology. Screening, assessment, and management of fatigue in adult survivors of cancer: an American Society of Clinical oncology clinical practice guideline adaptation. J Clin Oncol.. 2014;32(17):1840-50. [167054].

There is some evidence that mindfulness-based approaches, yoga, and acupuncture can reduce fatigue in cancer survivors.

3.22. 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 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