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hot flashes in Breast Cancer patient

Bouffées de chaleur dans le cancer du sein : évaluation de l'acupuncture

Articles connexes: - évaluation de la pharmacopée chinoise - ménopause -

1. Systematic Reviews and Meta-Analysis

Article connexe: - cancer du sein -

1.1. Kreher 2026

Kreher KL, Dörfler J, Büntzel J, Büntzel J, Hübner J. Reliability of Results from Randomized Studies and Systematic Reviews in Acupuncture: A Methodological Review for Acupuncture Against Symptoms of Breast Cancer Care. In Vivo. 2026;40(2):726-747. https://doi.org/10.21873/invivo.14234

Background	Breast cancer patients frequently experience treatment-related symptoms such as pain, fatigue, hot flashes, nausea, and psychological distress. Acupuncture has been investigated as a supportive therapy for these symptoms, but the methodological reliability of the available randomized trials and systematic reviews remains debated.
Objective	This methodological review aimed to evaluate the reliability and methodological quality of randomized controlled trials and systematic reviews assessing acupuncture for symptoms related to breast cancer care.
Methods	Randomized controlled trials and systematic reviews investigating acupuncture for breast cancer-related symptoms were identified and critically assessed. The methodological characteristics of the included studies, including risk of bias, study design, and reporting quality, were analyzed to determine the robustness and reliability of the evidence.
Results	The review found considerable variability in methodological quality across studies. While several trials and reviews reported beneficial effects of acupuncture on symptoms such as pain, fatigue, and hot flashes, limitations were frequently identified, including small sample sizes, heterogeneous interventions, insufficient blinding, and variability in outcome measures. These factors reduced the overall certainty of the evidence despite generally favorable clinical signals.
Conclusion	Evidence suggests that acupuncture may provide supportive benefits for symptoms associated with breast cancer treatment, but the reliability of the current literature is constrained by methodological limitations. Future studies with rigorous design, standardized interventions, and improved reporting are required to strengthen the evidence base.

1.1.1. Xu 2025 (vs sham)

Xu DF, Zheng HZ, Jiang SY, Chen BH, Zou HL, Li YJ, Wu WZ, Zuo ZY. Acupuncture Relative to Sham Control in Managing Breast Cancer-Related Hot Flashes: A Meta-Analysis of Randomized Controlled Trials. Complement Med Res. 2025;32(5):387-401. https://doi.org/10.1159/000547579

Background	Breast cancer is the leading cause of morbidity and mortality among female cancers globally. Hot flashes are among the most bothersome complications in women with breast cancer. Acupuncture is a common complementary approach for cancer worldwide. Here we aimed to determine the differential effect between acupuncture and sham acupuncture on hot flashes among breast cancer patients.
Methods	Eight English and Chinese databases through 10 October 2024, such as PubMed, Cochrane Library, ScienceDirect, Web of Science, etc., were searched to identify the randomized controlled trials (RCTs) about acupuncture relative to sham control treating breast cancer patients experiencing hot flashes. Outcomes included hot flash frequency per day, hot flash severity score, quality of life related to hot flashes, response rate. Continuous variables and categorical ones were expressed as standardized mean difference (SMD) or MD, and risk ratio (RR), with 95% confidence interval (CI), respectively, for meta-analysis. Sensitivity analysis and Grading of Recommendations, Assessment, Development, and Evaluations (GRADE) of evidence were conducted additionally.
Results	**Eight RCTs involving 493 participants** were included. Relative to sham control, acupuncture was significantly more efficacious in improving the quality of life of breast cancer patients experiencing hot flashes (165 participants, SMD [95% CI]: -1.01 [-1.99, -0.03], I2 = 88%, p = 0.04) at the end of treatment, as well as at follow-up of over 3 months (59 participants, MD [95% CI]: -3.38 [-4.83, -1.93]). With respect to response rate, acupuncture achieved a higher rate versus sham acupuncture (118 subjects, RR [95% CI]:2.66 [1.63, 4.36], I2 = 0, p < 0.0001). Sensitivity analysis solely supported the statistically significant difference between the two groups in terms of response rate (RR [95% CI]: 2.14 [1.03, 4.44]) or 3.20 [1.64, 6.23]). As for frequency and hot flash severity, no difference was noted between groups. GRADE of evidence showed low to very low quality.
Conclusion	Acupuncture reached a significantly higher response rate compared to sham control in breast cancer patients with hot flashes, whereas its efficacy on the quality of life showed inconsistency. Given significant heterogeneity and low quality of evidence, future large-sample-size and high-quality RCTs are warranted.

1.2. Zhang 2025

Zhang G, Gao C, Guo Z, Zhao W, Xu X, Wen H, Li Y, Lin R, Xu N, Cui S. How effective is acupuncture in treating hot flashes in breast cancer patients? A systematic review and meta-analysis. Front Oncol. 2025 Mar 17;15:1543938. https://doi.org/10.3389/fonc.2025.1543938

Backgound	Although acupuncture is recommended for managing breast cancer-related hot flashes, the level of evidence is limited. With the updating of randomized controlled trials, it is necessary to reassess its efficacy.
Objective	To assess the effectiveness of acupuncture in the treatment of hot flashes in patients with breast cancer.
Methods	Up to March 2024, we retrieved data from nine databases and used Stata software (version 14.0, version 17.0) and RevMan software (version 5.3) to conduct a meta-analysis. The Cochrane Collaboration's risk of bias assessment tool was used for methodological assessment of the risk of bias, and the GRADEpro GDT online assessment tool was used for evidence evaluation.

Results	In total, **11 randomized controlled trials (RCTs) involved 963 participants** were included in the meta-analysis. The result of risk of bias revealed that the included RCTs exhibited a high risk of bias, primarily attributable to deficiencies in randomization and blinding methods. The results of primary meta-analysis indicated that acupuncture can improved the hot flash symptom scale score (SMD, -0.54; 95% CI, -0.83 to -0.24; P < 0.05). However, acupuncture does not reduce the frequency of hot flashes(SMD, -0.20; 95% CI, -0.75 to 0.36; P = 0.48). Further subgroup analyses, including the type of control group and the duration of needle retention, etc. showed different results, highlighting the necessity for further research. Sensitivity analysis confirmed the reliability of these finding. In addition, due to various issues, the level of evidence is low.
Conclusions	Although acupuncture treatment for hot flashes in breast cancer shows potential, the evidence for the efficacy of acupuncture is still lacking due to various factors such as bias risk and significant differences between studies, and more high-quality RCTs are needed to confirm the efficacy of acupuncture.

1.3. Li 2021

Li H, Schlaeger JM, Jang MK, Lin Y, Park C, Liu T, Sun M, Doorenbos AZ. Acupuncture Improves Multiple Treatment-Related Symptoms in Breast Cancer Survivors: A Systematic Review and Meta-Analysis. J Altern Complement Med. 2021 Dec;27(12):1084-1097. https://doi.org/10.1089/acm.2021.0133

Introduction	Acupuncture has demonstrated effectiveness for symptom management among breast cancer survivors. This meta-analysis aims to evaluate the effect of acupuncture on treatment-related symptoms among breast cancer survivors.
Methods	The authors searched PubMed, CINAHL, and EMBASE for relevant randomized clinical trials (RCTs) of acupuncture for managing treatment-related symptoms published in English through June 2021. They appraised the quality of each article using the Cochrane Collaboration Risk of Bias Criteria. The primary outcomes were pain, hot flashes, sleep disturbance, fatigue, depression, lymphedema, and neuropathy as individual symptoms. They also evaluated adverse events reported in acupuncture studies.
Results	Of 26 selected trials (2055 patients), 20 (1709 patients) were included in the meta-analysis. Acupuncture was more effective than control groups in improving pain intensity [standardized mean difference (SMD) = −0.60, 95% confidence intervals (CI) −1.06 to −0.15], fatigue [SMD = −0.62, 95% CI −1.03 to −0.20], and **hot flash severity [SMD = −0.52, 95% CI −0.82 to −0.22]**. The subgroup analysis indicated that acupuncture showed trends but not significant effects on all the treatment-related symptoms compared with the sham acupuncture groups. Compared with waitlist control and usual care groups, the acupuncture groups showed significant reductions in pain intensity, fatigue, depression, hot flash severity, and neuropathy. No serious adverse events were reported related to acupuncture intervention. Mild adverse events (i.e., bruising, pain, swelling, skin infection, hematoma, headache, menstrual bleeding) were reported in 11 studies.
Conclusion	This systematic review and meta-analysis suggest that acupuncture significantly reduces multiple treatment-related symptoms compared with the usual care or waitlist control group among breast cancer survivors. The safety of acupuncture was inadequately reported in the included studies. Based on the available data, acupuncture seems to be generally a safe treatment with some mild adverse events. These findings provide evidence-based recommendations for incorporating acupuncture into clinical breast cancer symptom management. Due to the high risk of bias and blinding issues in some RCTs, more rigorous trials are needed to confirm the efficacy of acupuncture in reducing multiple treatment-related symptoms among breast cancer survivors.

1.4. Chien 2020

Chien TJ, Liu CY, Fang CJ, Kuo CY. The maintenance effect of acupuncture on breast cancer-related menopause symptoms: a systematic review. Climacteric. 2020;23(2):130-139. [218485]. doi

Background	Acupuncture has been used for many breast cancer treatment-related problems, but how long the effect lasts is unknown. This meta-analysis aims to evaluate how long the effect of acupuncture on breast cancer-related hot flushes and menopause symptoms lasts.
Methods	The research design followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Statement, without language restrictions. Seven databases from inception through February 2019 were accessed; only randomized clinical trials (RCTs) that examined the maintenance effect of acupuncture on hot flushes or menopause symptoms after treatment were included. Cochrane criteria were followed and RevMan 5.2 software was used to analyze trials.
Results	In total, 943 patients from 13 RCTs were analyzed. The meta-analysis showed that acupuncture had no significant long-term maintenance effect on the frequency or severity of hot flushes ($p = 0.29$; $p = 0.34$), but had a significant 3-month maintenance effect of ameliorating menopause symptoms at 3 months after treatment ended ($p = 0.001$). No adverse events were reported.
Conclusions	Acupuncture significantly alleviated menopause symptoms for at least 3 months, but not hot flushes. Breast cancer patients concerned about the adverse effects of hormone therapy could consider acupuncture as an alternative. Additional acupuncture at 3 months after the initial treatment course could be considered. A large-scale study may help to define the optimal guideline for this issue.

1.5. Liu 2020

Liu J, Nie G, Li Y, Wen Z, Lu L, Xie L, Cao D, Lai Y, Yang H. Nonhormonal Hot Flash Management for Breast Cancer Survivors: A Systematic Review and Network Meta-Analysis. Evid Based Complement Alternat Med. 2020. [209254]. https://doi.org/10.1155/2020/4243175

Materials and Methods	We conducted a systematic literature search in PubMed, Cochrane Central Register of Controlled Trials, Embase, Chinese Biomedicine Database (CBM), China National Knowledge Infrastructure (CNKI), Wan Fang, and VIP up to May 2018. Randomized controlled trials (RCTs) reporting nonhormonal hot flash treatments for breast cancer survivors were included. Primary outcome measurements were hot flash frequency and hot flash score of posttreatment. The methodological quality of each study was assessed with Cochrane's risk of bias tool.

Results	**16 RCTs involving 2,349 participants** were included. The nonhormonal therapies used in the included studies were classified as follows: lifestyle changes, mind-body techniques, dietary/supplements, SSRIs/SNRIs, other medications, and other therapies. Pairwise meta-analysis showed that the general effect of nonhormonal management was statistically more effective than no treatment/placebo/sham in reducing hot flash frequency (SMD = -0.60, 95% CI [-1.13, -0.06]; P=0.03)) and hot flash score (SMD = -0.38, 95% CI [-0.68, -0.08]). For hot flash frequency, results from the NMA showed that there was no statistically significant difference between any two of the nonhormonal treatments. Another NMA result indicated that acupuncture (other therapies) was 16.05 points more effective in reducing hot flash scores than no treatment/waitlist (SMD = -16.05, 95% CI [-30.2, -1.99]). These results were statistically significant. Acupuncture was also ranked the optimal nonhormonal therapy for both hot flash frequency and hot flash score. The safety analysis showed that there were few related adverse events during acupuncture and that drug related adverse reactions could have also occurred in studies using drug interventions.
Conclusions	This network meta-analysis comparing nonhormonal treatments suggested that acupuncture might be more effective in improving hot flashes for breast cancer survivors. A pronounced placebo response was found during hot flash treatments. The evidence of safety for nonhormonal therapies was also insufficient. Therefore, at present, we cannot make confirmative recommendations of nonhormonal hot flash management for breast cancer survivors.

1.6. Yuanqing 2020

Yuanqing P, Yong T, Haiqian L et al. 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.

1.7. Lu 2018

Lu Jing, Gao Cen, Chen Huan, Zha Xiaoming, Zhang Zhaohui. [Short-and medium-clinical effect of acupuncture in treating hot flashes in patients with breast cancer: a meta-analysis]. Acta Universitatis Medicinalis Nanjing (Natural Science). 2018;11:1533-1539. [201755].

Objective	To evaluate the short and medium-clinical effect of acupuncture therapy in treating hot flashes in patients with breast cancer by meta-analysis.
Methods	This systematic research analyzed all randomized controlled trials(RCTs)relating with the effects of acupuncture treatment for hot flashes of breast cancer patients in the CNKI, CBM, VIP, Wanfang and PubMed (30th June 2017 ago). The quality of RCTs was assessed by Cochrane systematic review. Multiple overall effects of results were analyzed with meta-analysis, and evaluated systematically by RevMan5.3 software. The heterogeneity was evaluated.
Results	In the follow-up visit of 3 months(SMD=-0.36,95%CI:-0.61□-0.10)and 6 months(SMD=-0.41,95%CI:-0.64□-0.18), acupuncture improved the syndrome systematically(P=0.006,P=0.000 5,respectively).
Conclusion	The results of clinical researches with high study quality show that acupuncture treatment can significantly improve the syndrome of hot flashes in short-and medium-term in breast cancer patient.

1.8. Pan 2018

Pan Y, Yang K, Shi X, Liang H, Shen X, Wang R, Ma L, Cui Q, Yu R, Dong Y. Clinical Benefits of Acupuncture for the Reduction of Hormone Therapy-Related Side Effects in Breast Cancer Patients: A Systematic Review. Integr Cancer Ther. 2018;17(3):602-618. [166845].

Importance	Acupuncture can help reduce unpleasant side effects associated with endocrine therapy for breast cancer. Nevertheless, comprehensive evaluation of current evidence from randomized controlled trials(RCTs) is lacking.
Objective	To estimate the efficacy of acupuncture for the reduction of hormone therapy-related side effects in breast cancer patients.
Evidence review	RCTs of acupuncture in breast cancer patients that examined reductions in hormone therapy-related side effects were retrieved from PubMed, EMBASE, Web of Science, Ovid MEDLINE, and Cochrane Library databases through April 2016. The quality of the included studies was evaluated according to the 5.2 Cochrane Handbook standards, and CONSORT and STRICTA (Revised Standards for Reporting Interventions in Clinical Trials of Acupuncture) statements. INTERVENTION: Interventions included conventional acupuncture treatment compared with no treatment, placebo, or conventional pharmaceutical medication. Major outcome measures were the alleviation of frequency and symptoms and the presence of hormone therapy-related side effects.
Findings/Results	A total of 17 RCTs, including a total of 810 breast cancer patients were examined. The methodological quality of the trials was relatively rigorous in terms of randomization, blinding, and sources of bias. Compared with control therapies, the pooled results suggested that acupuncture had moderate effects in improving stiffness. No significant differences were observed in hot flashes, fatigue, pain, gastrointestinal symptoms, Kupperman index, general well-being, physical well-being, tumor necrosis factor (TNF), and interleukin (IL).
Conclusions	Acupuncture therapy appears to be potentially useful in relieving functional stiffness. However, further large-sample trials with evidence-based design are still needed to confirm these findings.

1.9. Wang 2018

Wang XP, Zhang DJ, Wei XD, Wang JP, Zhang DZ. Acupuncture for the relief of hot flashes in breast cancer patients: A systematic review and meta-analysis of randomized controlled trials and observational studies. J Cancer Res Ther. 2018. [173091].

Objective	To critically assess the effectiveness and safety of acupuncture for treating hot flashes (HFs) among breast cancer (BC) patients, and to get much more highly compelling evidence then to guide clinical practice.
Methods	Comprehensive systematic literature searches were carried out for identifying randomized controlled trials and observational studies (Oss) published before January 2015. The meta-analysis (MA) was performed by Review Manager 5 software if data could be merged routinely, if not descriptions would be given.
Results	A total of **18 studies were eligible** ultimately. With respect to HFs frequency, the MA during treatment showed a significant difference (MD = -1.78, 95% confidence intervals [95% Cis]: -3.42–0.14), but no statistical differences were observed when posttreatment or follow-up period. While electroacupuncture versus applied relaxation, they both helped to promote HFs markedly but did not reveal statistically significance between them. Referring to Kupperman's index, all the treatment brought out great assistance when compared with baseline conditions, and there was significant difference between real acupuncture sham acupuncture (posttreatment: MD = -4.40, 95% CI: -6.77–2.03; follow-up: MD = -4.30, 95% CI: -6.52–2.08). In terms of OS, 7 prospective single arm studies focused on exploring the efficacy of traditional acupuncture, and all revealed moderate or great benefit for BC patients suffering from HFs.
Conclusions	**Acupuncture still appeared to be an efficacious therapeutic strategy, especially for the less/no side effects**. Because of its widespread acceptance and encouraging effectiveness for improving HFs, much more high-quality studies are in need urgently.

1.10. Tao 2017

Tao WW, Tao XM, Song CL. Effects of non-pharmacological supportive care for hot flushes in breast cancer: a meta-analysis. Support Care Cancer. 2017;25(7):2335-234. [176724].

Purpose	To assess the efficacy of non-pharmacological therapies for hot flushes (HFs) in women with breast cancer (BC).
Methods	Nine databases (MEDLINE, Cochrane Central Register of Controlled Trials, EMBASE, PsycINFO, CINAHL, China National Knowledge Infrastructure (CNKI), Chinese Scientific Journal Database (VIP), China Biology Medicine (CBM), and Wan Fang Database) were searched from their inceptions to October 2016. We also hand-searched reference lists of reviews and included articles, reviewed conference proceedings, and contacted experts. Finally, randomized controlled trials (RCTs) were aggregated to evaluate the therapeutic effect of acupuncture for HFs in women with BC.

Results	**Sixteen trials were included** in the meta-analysis. Significant combined effects of non-pharmacological therapies were observed in reducing frequency and severity of HFs after treatment (d = -0.57, P < 0.001). These effects were sustained, albeit reduced in part, during follow-up (d = -0.36, P < 0.001), with the exception of frequency (P = 0.41). Meta-analysis according to therapy types showed that for hypnosis, HFs scores instead of scores of HFs-related daily interference scale (HFRDIS) were significantly lowered at the post-treatment time point (d = -13.19, P < 0.001); **for acupuncture, a small but significant effect on HFRDIS was found at the post-treatment time point (d = -3.34, P < 0.001). The effect was sustained during follow-up; however, no effect was evident for HFs frequency**; for cognitive behavioral therapy (CBT), at the post-treatment time point, but not during follow-up, a small but significant effect was documented for HFs score (d = -0.88, P < 0.01). No serious adverse effect was reported in the included studies.
Conclusions	Various types of non-pharmacological therapies were associated with significant effects on HFs in women with BC.

1.11. Chien 2017

Chien TJ, Hsu CH, Liu CY, Fang CJ. Effect of acupuncture on hot flush and menopause symptoms in breast cancer- A systematic review and meta-analysis. PLoS One. 2017;12(8). [172374].

Background	Many breast cancer patients suffer from hot flush and medical menopause as side effects of treatment. Some patients undergo acupuncture, rather than hormone therapy, to relieve these symptoms, but the efficacy of acupuncture is uncertain. This meta-analysis evaluated the efficacy of acupuncture on hot flush and menopause symptoms in women with breast cancer.
Methods	A literature search was performed, following the PRISMA Statement and without language restrictions, of 7 databases from inception through March 2017. All selected studies were randomized clinical trials (RCTs) that examined the effect of needle acupuncture on hot flush and menopause symptoms in patients with breast cancer. The methodological quality of these trials was assessed using Cochrane criteria, and meta-analysis software (RevMan 5.2) was used to analyze the data.
Results	We examined 844 breast cancer patients (average age: 58 years-old) from **13 RCTs**. The trials had medium-to-high quality, based on the modified Jadad scale. The meta-analysis showed that acupuncture had no significant effect on the frequency and the severity of hot flush (p = 0.34; p = 0.33), but significantly ameliorated menopause symptoms (p = 0.009). None of the studies reported severe adverse events.
Conclusions	**Acupuncture significantly alleviated menopause symptoms, but had no effect on hot flush**. Breast cancer patients concerned about the adverse effects of hormone therapy should consider acupuncture. Further large-scale studies that also measure biomarkers or cytokines may help to elucidate the mechanism by which acupuncture alleviates menopause symptoms in patients with breast cancer.

1.12. Lopez-Junior 2016

Lopez-Junior LC, Cruz LAP, Leopoldo VC et al. Effectiveness of Traditional Chinese Acupuncture versus Sham Acupuncture: a Systematic Review. Rev Lat Am Enfermagen. 2016;24:e2762. [176614].

Objective	to identify and synthesize the evidence from randomized clinical trials that tested the effectiveness of traditional Chinese acupuncture in relation to sham acupuncture for the treatment of hot flashes in menopausal women with breast cancer.

Methods	systematic review guided by the recommendations of the Cochrane Collaboration. Citations were searched in the following databases: MEDLINE via PubMed, Web of Science, CENTRAL, CINAHL, and LILACS. A combination of the following keywords was used: breast neoplasm, acupuncture, acupuncture therapy, acupuncture points, placebos, sham treatment, hot flashes, hot flushes, menopause, climacteric, and vasomotor symptoms.
Results	a total of 272 studies were identified, **five of which were selected and analyzed**. **Slight superiority of traditional acupuncture compared with sham acupuncture was observed**; however, there were no strong statistical associations.

1.13. Chen 2016

Chen YP, Liu T, Peng YY, Wang YP, Chen H, Fan YF, Zhang L. Acupuncture for hot flashes in women with breast cancer: A systematic review. J Cancer Res Ther. 2016;12(2):535-42. [191961].

Background	Acupuncture is applied worldwide in treating hot flashes (HFs), which may be a common complication experienced by women with breast cancer (BC). Although researches associated with the effect of acupuncture for HFs have been done by many people, there is a lack of comprehensive evaluation of the effect of this therapy.
Objective	The aim of this systematic review is to assess the effectiveness of acupuncture for HFs in women with BC.
Methods	Seven databases (Cochrane Central Register of Controlled Trials, Embase, PubMed, Web of Science, Chinese National Knowledge Infrastructure Database, Chinese Biomedical Literature Database, and Wan Fang Database) were searched from their inceptions to June 2015 without language restrictions. Randomized controlled trials (RCTs) were aggregated to evaluate the therapeutic effect of acupuncture for HFs in women with BC.
Results	**Twelve RCTs** were identified at last, and all of the studies agreed on the potential therapeutic effect of acupuncture for HFs in women with BC. However, three trials showed significant difference compared with the controls. One research demonstrated an encouraging trend, and six did not find any difference between acupuncture and controls. Another two trials got a negative result compared with hormone therapy. The meta-analysis indicated a difference in the number of HFs after treatment and during follow-up compared with the controls. Three trials reported Kupperman index scores, and meta-analysis showed significant difference between acupuncture and controls after treatment and during follow-up.

1.14. Chiu 2016

Chiu HY, Shyu YK, Chang PC, Tsai PS. Effects of Acupuncture on Menopause-Related Symptoms in Breast Cancer Survivors: A Meta-analysis of Randomized Controlled Trials. Cancer Nurs. 2016;:228-37. [195233].

Background	Evidence regarding the effects of acupuncture on hot flashes in breast cancer survivors is conflicting. Little is known about the intermediate-term effects of acupuncture on hot flashes and other menopause-related symptoms in breast cancer survivors.
Objective	The objective of this study was to evaluate the short-term and intermediate-term effects of acupuncture on menopause-related symptoms and particularly on hot flashes in breast cancer survivors.

METHODS	Electronic databases including EMBASE, PubMed, PsycINFO, Web of Science, CINAHL, Wanfang Data Chinese Database, and China Knowledge Resource Integrated Database from inception until June 15, 2014, were searched. Randomized controlled trials in which acupuncture was compared with sham controls or other interventions according to the reduction of hot flashes or menopause-related symptoms in breast cancer survivors were included.
Results	We analyzed **7 studies involving 342 participants**. Acupuncture significantly reduced the frequency of hot flashes and severity of menopause-related symptoms (g = -0.23 and -0.36, respectively) immediately after the completion of treatment. In comparison with sham acupuncture, effects of true acupuncture on the frequency and severity of hot flashes were not significantly different. At 1 to 3 months' follow-up, the severity of menopause-related symptoms remained significantly reduced (g = -0.56).
Conclusion	Acupuncture yielded small-size effects on reducing hot-flash frequency and the severity of menopause-related symptoms. IMPLICATIONS FOR PRACTICE: **Acupuncture may be used as a complementary therapy for breast cancer survivors experiencing hot flashes and other menopause-related symptoms**; however, whether acupuncture exerts specific treatment effects other than needling or placebo effects needs to be further evaluated.

1.15. Johns 2016

Johns C, Seav SM, Dominick SA, Gorman JR, Li H, Natarajan L, Mao JJ, Su HI. Informing hot flash treatment decisions for breast cancer survivors: a systematic review of randomized trials comparing active interventions. Breast Cancer Res Treat. 2016;:415-26. [190323].

Objectives	Patient-centered decision making about hot flash treatments often incorporates a balance of efficacy and side effects in addition to patient preference. This systematic review examines randomized controlled trials (RCTs) comparing at least two non-hormonal hot flash treatments in breast cancer survivors.
Methods	In July 2015, PubMed, SCOPUS, CINAHL, Cochrane, and Web of Science databases were searched for RCTs comparing active, non-hormonal hot flash treatments in female breast cancer survivors. **Thirteen trials** were included after identifying 906 potential studies. Four trials were dose comparison studies of pharmacologic treatments citalopram, venlafaxine, gabapentin, and paroxetine.
Results	Hot flash reduction did not differ by tamoxifen or aromatase inhibitor use. Citalopram 10, 20, and 30 mg daily had comparable outcomes. Venlafaxine 75 mg daily improved hot flashes without additional side effects from higher dosing. Gabapentin 900 mg daily improved hot flashes more than 300 mg. Paroxetine 10 mg daily had fewer side effects than 20 mg. Among four trials comparing different pharmacologic treatments, venlafaxine alleviated hot flash symptoms faster than clonidine; participants preferred venlafaxine over gabapentin. Five trials compared pharmacologic to non-pharmacologic treatments. **Acupuncture had similar efficacy to venlafaxine and gabapentin but may have longer durability after completing treatment and fewer side effects**. We could not perform a pooled meta-analysis because outcomes were not reported in comparable formats.
Conclusions	Clinical trial data on non-hormonal hot flash treatments provide comparisons of hot flash efficacy and other patient important outcomes to guide clinical management. **Clinicians can use the information to help patients select hot flash interventions.**

1.16. Salehi 2016

Inclusion d'essais non randomisés

Salehi A, Marzban M, Zadeh AR. Acupuncture for treating hot flashes in breast cancer patients: an updated meta-analysis. Support Care Cancer. 2016. [187762].

Purpose	The aim of this study was to evaluate the effectiveness of acupuncture for treatment of hot flash in women with breast cancer.
Methods	The aspects considered in this study included searching for 12 data bases until April 2015 and consulting reference lists of reviews and related articles. Additional features studied comprised all articles on human patients with breast cancer treated with needle acupuncture with or without electrical stimulation for the treatment of hot flashes. The methodological quality was assessed using the modified Jadad score.
Result	The searches identified **12 relevant articles for inclusion**. The meta-analysis without any subgroup or moderator failed to show favorable effects of acupuncture on reducing the frequency of hot flashes after intervention (n = 680, SMD = - 0.478, 95 % CI -0.397 to 0.241, P = 0.632) but exhibited marked heterogeneity of the results (Q value = 83.200, P = 0.000, I2 = 83.17, T2 = 0.310).
Conclusion	The meta-analysis used had contradictory results and yielded **no convincing evidence to suggest that acupuncture was an effective treatment** of hot flash in patients with breast cancer. Multi-central studies including large sample size are required to investigate the efficiency of acupuncture for treating hot flash in patients with breast cancer.

1.17. Garcia 2015

Garcia MK, Graham-Getty L, Haddad R, Li Y, Mcquade J, Lee Rt, Spano M, Cohen L. Systematic review of acupuncture to control hot flashes in cancer patients. Cancer. 2015;121(22):3948-58. [190629].

Objective	Hot flashes (HFs) are a common side effect of cancer treatment. The purpose of this systematic review was to evaluate evidence related to the use of acupuncture for HFs in cancer patients.
Methods	EMBASE, MEDLINE, Cochrane (all databases), PubMed, the Cumulative Index to Nursing and Allied Health Literature, and Scopus were searched from their inception through December 2014. Included studies had to be randomized controlled trials with a usual-care and/or placebo comparison group that investigated acupuncture to treat HFs in cancer patients. No language limits were applied. The risk of bias (ROB) was rated as low, high, or unclear according to Cochrane criteria. Both within-group and between-group changes were evaluated. Four hundred two items were identified, and 192 duplicates were omitted; this left 210 publications to be screened.
Results	**Eight studies met the inclusion criteria, and all involved women with breast cancer**. All studies showed significant within-group improvement from the baseline for true acupuncture (TA). One study showed significant improvement in favor of TA over sham acupuncture (SA; P < .001), 1 study found in favor of TA over SA for nighttime HFs only (P = .03), and 1 study found in favor of TA over SA or untreated controls (P < .01 and P < .001, respectively). Between-group (TA vs SA) effect size (ES) estimates for daytime and nighttime HFs were calculated (ES range, 0.04-0.9) whenever possible. No studies were rated with a low ROB.
Conclusion	In conclusion, the **current level of evidence is insufficient to either support or refute the benefits of acupuncture for the management of HFs in cancer patients**. Future studies should provide ithin-group and between-group ES estimates in addition to P values.

1.18. Rada 2010

Rada G, Capurro D, Pantoja T, Corbalán J, Moreno G, Letelier LM, Vera C. Non-hormonal interventions for hot flushes in women with a history of breast cancer. Cochrane Database Syst Rev. 2010. [166335].

Objectives	Hot flushes are common in women with a history of breast cancer. Hormonal therapies are known to reduce these symptoms but are not recommended in women with a history of breast cancer due to their potential adverse effects. The efficacy of non-hormonal therapies is still uncertain. OBJECTIVES: To assess the efficacy of non-hormonal therapies in reducing hot flushes in women with a history of breast cancer.
Methods	SEARCH STRATEGY: We searched the Cochrane Breast Cancer Group Specialised Register, CENTRAL (The Cochrane Library), MEDLINE, EMBASE, LILACS, CINAHL, PsycINFO (August 2008) and WHO ICTRP Search Portal. We handsearched reference lists of reviews and included articles, reviewed conference proceedings and contacted experts. SELECTION CRITERIA: Randomized controlled trials (RCTs) comparing non-hormonal therapies with placebo or no therapy for reducing hot flushes in women with a history of breast cancer. DATA COLLECTION AND ANALYSIS: Two authors independently selected potentially relevant studies, decided upon their inclusion and extracted data on participant characteristics, interventions, outcomes and the risk of bias of included studies.
Results	Sixteen RCTs met our inclusion criteria. We included six studies on selective serotonin (SSRI) and serotonin-norepinephrine (SNRI) reuptake inhibitors, two on clonidine, one on gabapentin, two each on relaxation therapy and homeopathy, and one each on vitamin E, magnetic devices and **acupuncture**. The risk of bias of most studies was rated as low or moderate. Data on continuous outcomes were presented inconsistently among studies, which precluded the possibility of pooling the results. Three pharmacological treatments (SSRIs and SNRIs, clonidine and gabapentin) reduced the number and severity of hot flushes. One study assessing vitamin E did not show any beneficial effect. One of two studies on relaxation therapy showed a significant benefit. **None of the other non-pharmacological therapies had a significant benefit**. Side-effects were inconsistently reported.
Conclusions	Clonidine, SSRIs and SNRIs, gabapentin and relaxation therapy showed a mild to moderate effect on reducing hot flushes in women with a history of breast cancer.

1.19. Lee 2009

Lee MS, Kim KH, Choi SM, Ernst E. Acupuncture for treating hot flashes in breast cancer patients: a systematic review. Breast Cancer Res Treat. 2009. 115(3):497-503. [153144].

Objective	The objective of this review was to assess the effectiveness of acupuncture as a treatment option for hot flashes in patients with breast cancer.
Methods	We searched the literature using 14 databases from their inceptions to August 2008, without language restrictions. We included randomised clinical trials (RCTs) comparing real with sham acupuncture or another active treatment or no treatment. Their methodological quality was assessed using the modified Jadad score.

Results	Three RCTs compared the effects of manual acupuncture with sham acupuncture. One RCT showed favourable effects of acupuncture in reducing hot flash frequency, while other two RCTs failed to do so. The meta-analysis show significant effects of acupuncture compared with sham acupuncture (n = 189, weight mean difference, 3.09, 95% confidence intervals -0.04 to 6.23, P = 0.05) but marked heterogeneity was observed in this model (chi (2) = 8.32, P = 0.02, I (2) = 76%). One RCT compared the effects of electroacupuncture (EA) with hormone replacement therapy. Hormone therapy was more effective than EA. Another RCT compared acupuncture with venlafaxine and reported no significant intergroup difference. A further RCT compared acupuncture with applied relaxation and failed to show a significant intergroup difference.
Conclusion	In conclusion, the **evidence is not convincing to suggest acupuncture is an effective treatment of hot flash** in patients with breast cancer. Further research is required to investigate whether there are specific effects of acupuncture for treating hot flash in patients with breast cancer.

1.20. Special outcome

1.20.1. Hervik 2016 (adverse effects)

Hervik JB, Stub T. Adverse effects of non-hormonal pharmacological interventions in breast cancer survivors, suffering from hot flashes: A systematic review and meta-analysis. Breast Cancer Res Treat. 2016;160(2):223-36. [188670].

Purpose	To access frequency and severity of adverse effects (AE) of non-hormonal drugs (NHD) for hot flashes in breast cancer survivors compared to controls and analyze adverse-effect risk by reviewing published randomized trials.
Methods	Cochrane Central Register for Controlled Trials, Embase, Medline, PsycINFO and PubMed databases were searched. Trials were included where participants were survivors of breast cancer suffering from hot flashes, treatment included self-administered venlafaxine, gabapentin or clonidine, and AE were reported. AE frequency and severity were graded. A meta-analysis of ten trials with sub-group analyses was conducted.
Results	Forty-nine studies were identified, and 12 were included. A total of 1467 participants experienced 772 adverse effects, 81 % (n = 627) in the treatment group and 19 % (n = 145) in the control group. Sixty-seven percent of AE was graded as mild and 33 % as moderate. The frequency of AE for NHD was overall significant compared to placebo. Sub-group analysis indicated that AE frequency and severity increased at higher doses of venlafaxine and gabapentin compared to placebo.
Conclusion	The odds for experiencing AE was significantly higher in patients randomized to high-dose NHD than those randomized to controls, including placebo, low-dose medication and acupuncture. These therapies should be considered as a potential treatment alternative.

1.21. Overviews of systematic reviews

1.21.1. Sasaki 2019 (breast cancer)

Sasaki Y, Cheon C, Motoo Y, Jang S, Park S, Ko SG, Jang BH, Hwang DS. [Complementary and Alternative Medicine for Breast Cancer Patients: An Overview of Systematic Reviews]. Yakugaku Zasshi. 2019;139(7):1027-1046. [199186].

Objectives	The application of systematic review (SR) has been increased rapidly in the field of cancer treatment. Complementary and alternative medicine (CAM) for cancer is no exception. The aim of this review is to evaluate and summarize systematic reviews on the CAM use in breast cancer patients.
Methods	Search sources were Centre for Reviews and Dissemination (CRD), Cochrane Database of Systematic Reviews (CDSR), and PubMed. In addition, we assessed the quality of SR with the Assessing the Methodological Quality of Systematic Reviews (AMSTAR). This review did not consider control groups and outcomes.
Results	Thirty-four SRs met a set of criteria. According to interventions, there were twenty SRs which included yoga, acupuncture, and herbal medicines. Meta-analysis of 19 out of 34 reviews showed the followings: (1) **acupuncture had a beneficial effect on the frequency of hot flushes**, (2) yoga had a beneficial effect on depression and health-related QOL, (3) mindfulness-based stress reduction (MBSR) had a beneficial effect on anxiety and depression, (4) combination of herbal medicine and chemotherapy synergistically improved clinical outcomes, (5) **acupuncture did not show significant effect on the severity of hot flushes and cancer-related pain**, (6) yoga was unable to be confirmed as having an effect on cancer-related pain and physical well-being. Given the results of AMSTAR, 9 out of 34 reviews were of high quality and 3 reviews were deemed to be of low quality. In conclusion, since most SRs were at moderate or high-quality levels, CAM could be helpful for treating specific symptoms related to breast cancer.

2. Clinical Practice Guidelines

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

2.1. American Society of Breast Surgeons (ASBS, USA) 2024 Ø

A Surgeon’s Resource Guide to Endocrine Therapy for the Management and Risk Reduction of Hormone Receptor Positive Breast Cancer. 2024.
https://www.breastsurgeons.org/docs/statements/ASBrS-Resource-Guide-on-Endocrine-Therapy.pdf

Vasomotor Symptoms: Studies have not shown a significant benefit with traditional acupuncture, but data is promising for electroacupuncture.

Note : Absence de référence citée sur les études prises en compte.

2.2. British Gynaecological Cancer Society (BGCS) and British Menopause Society (BMS) 2024 Ø

British Gynaecological Cancer Society and British Menopause Society. Guidelines. Management of menopausal symptoms following treatment of gynaecological cancer. 2024.
https://www.bgcs.org.uk/wp-content/uploads/2024/08/BGCS-BMS-Guidelines-on-Management-of-Menopausal-Symptoms-after-Gynaecological-Cancer.pdf

Taylor A, Clement K, Hillard T, Sassarini J, Ratnavelu N, Baker-Rand H, Bowen R, Davies MC, Edey K, Fernandes A, Ghaem-Maghami S, Gomes N, Gray S, Hughes E, Hudson A, Manchanda R, Manley K, Nicum S, Phillips A, Richardson A, Morrison J. British Gynaecological Cancer Society and British Menopause Society guidelines: Management of menopausal symptoms following treatment of

gynaecological cancer. Post Reprod Health. 2024 Dec;30(4):256-279. https://doi.org/10.1177/20533691241286666.

Acupuncture: Although acupuncture is superior to no treatment or a wait-list control in randomised clinical trials, systematic reviews concluded that acupuncture was not significantly superior to sham acupuncture.

References cited:

- 102. The Nonhormone Therapy Position Statement of The North American Menopause Society. The 2023 nonhormone therapy position statement of the North American Menopause Society. Menopause 2023; 30(6): 573–590.
- 106. Befus D, Coeytaux RR, Goldstein KM, et al. Management of menopause symptoms with acupuncture: an umbrella systematic review and meta-analysis. J Altern Complement Med 2018; 24(4): 314–323.

2.3. 6th and 7th International consensus guidelines for the management of advanced breast cancer 2023 ⊕

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

For hot flushes: Venlafaxine, oxybutynin, gabapentin, clonidine and **acupuncture** are available options (Level of Evidence 1/ b; Consensus 100%)

2.4. Institut National du Cancer (INC, France) 2023 Ø

Prévention et gestion des effets indésirables des anticancéreux - Hormonothérapies dans le traitement adjuvant des cancers du sein. Institut National du Cancer. 2023. https://www.e-cancer.fr/Expertises-et-publications/Catalogue-des-publications/Prevention-et-gestion-des-effets-indesirables-des-anticancereux-Hormonotherapies-dans-le-traitement-adjuvant-des-cancers-du-sein

Bouffées de chaleur (tamoxifène, agonistes de la GNRH). En complément, selon le groupe de travail, le recours au yoga, à l'hypnose et à la thérapie cognitivo-comportementale peut être envisagé selon les possibilités du patient. Des essais cliniques ont évalué l'impact de l'**acupuncture** sur les bouffées de chaleur sous hormonothérapie. Cependant leurs résultats ne permettent pas de conclure sur son efficacité dans cette situation. L'activité physique adaptée n'a pas montré d'effet significatif sur la gestion des bouffées de chaleur.

2.5. North American Menopause Society (NAMS, USA) 2023 Ø

The 2023 nonhormone therapy position statement of The North American Menopause Society.

Menopause. 2023 Jun 1;30(6):573-590. https://doi.org/10.1097/gme.0000000000002200 .

Existing evidence does not support the use of traditional acupuncture for the treatment of VMS, neither for midlife women nor for VMS in survivors of breast cancer. (Level I; not recommended). The use of electroacupuncture, although more promising, still warrants further investigation. (Level II; not recommended)

2.6. 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

Menopausal symptoms: In cases where hormone replacement treatment is contraindicated or persistent hot flushes, selective serotonin reuptake or norepinephrine re-uptake inhibitors can be used in conjunction with non-pharmacological approaches such as cognitive based therapy, yoga, **acupuncture, auriculotherapy**.

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

NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) Survivorship Version 1.2022. National Cancer Comprehensive Network. 2022. 285P. [170072]. https://www.nccn.org/professionals/physician_gls/pdf/survivorship.pdf

Vasomotor symptoms (ie, hot flashes/night sweats) disruptive to quality of life in females : Acupuncture.
Vasomotor symptoms (ie, hot flashes/night sweats) disruptive to quality of life in males : ... Acupuncture.

2.8. 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/

11.3.1.9. *Menopausal symptoms*. Acupuncture. Recommendation strength: Can. Patient context: Oncological patients. Note: Menopausal hot flashes.

2.9. Canadian Urological Association (CUA, Canada) 2021 ⊕

Kokorovic A, So AI, Serag H, French C, Hamilton RJ, Izard JP, Nayak JG, Pouliot F, Saad F, Shayegan B, Aprikian A, Rendon RA. Canadian Urological Association guideline on androgen deprivation therapy: Adverse events and management strategies. Can Urol Assoc J. 2021;15(6):E307-E322. [219222]. doi

Acupuncture may have a beneficial effect and can be considered in patients unwilling or unable to use pharmacotherapy (LE: 3, weak recommendation).

2.10. Society of Obstetricians and Gynaecologists of Canada (SOGC, Canada)2021 ⊕

Jacobson M, Mills K, Graves G, Wolfman W, Fortier M. Guideline No. 422f: Menopause and Breast Cancer. J Obstet Gynaecol Can. 2021;43(12):1450-56.e1. [223578]. https://doi.org/10.1016/j.jogc.2021.09.011.

Non-pharmacotherapeutic options for the management of vasomotor symptoms in breast cancer patients include paced breathing, **acupuncture**, and cognitive behavioural therapy (strong, moderate).

2.11. European School of Oncology (ESO) and the European Society for Medical Oncology (ESMO) 2020 ⊕

Cardoso F, Paluch-Shimon S, Senkus E, Curigliano G, Aapro MS, André F, Barrios CH, Bergh J, Bhattacharyya GS, Biganzoli L, et al. 5th ESO-ESMO international consensus guidelines for advanced breast cancer (ABC 5). Ann Oncol. 2020;31(12):1623-49. [212217]. doi

For hot flushes: venlafaxine, oxybutynin, gabapentin, clonidine and acupuncture are available options.

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

NCCN Guidelines for Supportive Care : Survivorship version 2.2020. National Cancer Comprehensive Network. 2020. 263P. doi

Vasomotor symptoms (ie, hot flashes/night sweats) disruptive to quality of life in females: Non-Pharmacologic Treatments : **...acupuncture...**.
Vasomotor symptoms (ie, hot flashes/night sweats) disruptive to quality of life in males: Non-Pharmacologic Treatments : **...acupuncture...**.
Neuropathic pain : Paresthesias (tingling or prickling),Shooting, "electrical", Numbness: Non-Pharmacologic Therapies : **...acupuncture...**.
Myalgias, Arthralgias: Treatments : **...acupuncture** (categorie 1 for Aromatase inhibitor-induced Arthralgia).
Myofascial pain: Treatments : **...acupuncture or acupressure**.

2.13. Oncology Nursing Society (ONS, USA) 2020 Ø

Kaplan M, Ginex PK, Michaud LB, Fernández-Ortega P, Leibelt J, Mahon S, Rapoport BL, Robinson V, Maloney C, Moriarty KA, Vrabel M, Morgan RL. ONS Guidelines™ for Cancer Treatment-Related Hot Flashes in Women With Breast Cancer and Men With Prostate Cancer. Oncol Nurs Forum. 2020;47(4):374-399. [222109]. doi

Recommendation 14: Among patients with cancer experiencing drug- or surgery-induced hot flashes, the panel recommends acupuncture and electroacupuncture only in the context of a clinical trial. Strength of Recommendation : No recommendation knowledge gap.

2.14. American Society of Breast Surgeons (ASBrS, USA) 2019 ⊕

A Surgeon's Resource Guide to Systemic Therapy in the Management of Hormone Receptor Positive Breast Cancer. American Society of Breast Surgeons (ASBrS). 2019;:25P. [219380]. URL

Hot Flashes or Vasomotor Symptoms: Acupuncture- Studies show lifestyle modification and 30-minute session per week was more effective than gabapentin or venlafaxine.

2.15. American Society of Clinical Oncology (ASCO, USA) 2018 ⊕

Carter J, Lacchetti C, Andersen BL, Barton DL, Bolte S, Damast S, Diefenbach MA, DuHamel K, Florendo J, Ganz PA, Goldfarb S, Hallmeyer S, Kushner DM, Rowland JH. Interventions to Address Sexual Problems in People With Cancer: American Society of Clinical Oncology Clinical Practice Guideline Adaptation of Cancer Care Ontario Guideline. J Clin Oncol. 2018;36(5):492-511. [198253].

Condition: Vasomotor Symptoms. Recommendation 5. Men with vasomotor symptoms should be offered medication for symptomatic improvements. Options would include venlafaxine, medroxyprogesterone acetate, cyproterone acetate, and gabapentin. **Acupuncture** may be a suitable alternative, as may be other integrative medicine options, such as slow-breathing techniques and hypnosis, as evidence demonstrates clinical benefit in women.

2.16. Spanish Society of Medical Oncology (SEOM, Spain) 2018 ⊕

Barnadas A, Algara M, Cordoba O, Casas A, Gonzalez M, Marzo M, Montero A, Muñoz M, Ruiz A, Santolaya F, Fernandez T. Recommendations for the follow-up care of female breast cancer survivors: a guideline of the Spanish Society of Medical Oncology (SEOM), Spanish Society of General Medicine (SEMERGEN), Spanish Society for Family and Community Medicine (SEMFYC) et al. Clin Transl Oncol. 2018;20(6):687-694. [175865].

Hot flashes secondary to menopause: Acupuncture has demonstrated efficacy.
Joint pain: Acupuncture can be beneficial.

2.17. 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 Menopause Syndrome in Breast Cancer Patients. *To improve frequency and severity of hot flashes*. Level of evidence 1b (individual RCT), 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. *Electro-acupuncture to improve on sleep and hot flashes* : Level of evidence 2a (systematic review of cohort studies), grade of evidence (B), AGO recommendation grade (+) This examination or therapeutic intervention is for the patient of limited benefit and can be performed.

2.18. 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**.

2.19. 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].

Vasomotor/hot flashes. Recommendations: Acupuncture can be considered for improving hot flashes. (grade C)

2.20. Cancer Australia 2016 (Australie) ⊕

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

Acupuncture and electro-acupuncture can be considered for the management of *moderate to severe vasomotor symptoms* in women with a history of breast cancer noting there is inconsistent evidence regarding their effectiveness (grade D). Limited evidence of an inconsistent effect of acupuncture on the frequency and severity of hot flushes, Limited evidence for an inconsistent effect on vasomotor symptoms with acupuncture.

2.21. 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)

Bouffées de chaleurs : interet notamment de l'acupuncture pour les femmes atteintes de cancer du sein sous hormonothérapie (niveau de preuve HAS B).

2.22. 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].

Hot flashes. Recommendations: Acupuncture can be considered for decreasing the number of hot flashes in BC patients. Electroacupuncture can be considered for decreasing the number of hot flashes in BC patients. Strength of evidence: C

2.23. European Partnership for Action Against Cancer (EPAA, Europe) 2014 ⊕

Complementary and alternative medicine (CAM) in cancer care. Development and opportunities of Integrative Oncology. European Partnership for Action Against Cancer (EPAAC). 2014;:339P. [186081].

As to the use of acupuncture and TCM in the treatment of symptoms correlated to anti-cancer therapy, the literature has demonstrated a good level of evidence in the following cases: nausea and vomiting, pain, **hotflashes** and xerostomia, taking also in account the absence of relevant adverse effects and interactions.

3. Randomized Controlled Trials

3.1. Beast Cancer

3.1.1. Sources

- Wang 2018: Wang XP, Zhang DJ, Wei XD, Wang JP, Zhang DZ. Acupuncture for the relief of hot flashes in breast cancer patients: A systematic review and meta-analysis of randomized controlled trials and observational studies. J Cancer Res Ther. 2018.
- Chien 2017: Chien TJ, Hsu CH, Liu CY, Fang CJ. Effect of acupuncture on hot flush and menopause symptoms in breast cancer- A systematic review and meta-analysis. PLoS One. 2017;12(8).
- Tao 2017: Tao WW, Tao XM, Song CL. Effects of non-pharmacological supportive care for hot flushes in breast cancer: a meta-analysis. Support Care Cancer. 2017;25(7):2335-234.
- Lopez-Junior 2016: Lopez-Junior LC, Cruz LAP, Leopoldo VC et al. Effectiveness of Traditional Chinese Acupuncture versus Sham Acupuncture: a Systematic Review. Rev Lat Am Enfermagen. 2016;24:e2762.
- Chen 2016: Chen YP, Liu T, Peng YY, Wang YP, Chen H, Fan YF, Zhang L. Acupuncture for hot flashes in women with breast cancer: A systematic review. J Cancer Res Ther. 2016;12(2):535-42.
- Chiu 2016: Chiu HY, Shyu YK, Chang PC, Tsai PS. Effects of Acupuncture on Menopause-Related Symptoms in Breast Cancer Survivors: A Meta-analysis of Randomized Controlled Trials. Cancer Nurs. 2016;:228-37.
- Johns 2016: Johns C, Seav SM, Dominick SA, Gorman JR, Li H, Natarajan L, Mao JJ, Su HI. Informing hot flash treatment decisions for breast cancer survivors: a systematic review of randomized trials comparing active interventions. Breast Cancer Res Treat. 2016;:415-26.
- Garcia 2015: Garcia MK, Graham-Getty L, Haddad R, Li Y, Mcquade J, Lee Rt, Spano M, Cohen L. Systematic review of acupuncture to control hot flashes in cancer patients. Cancer. 2015;121(22):3948-58.
- Rada 2010: Rada G, Capurro D, Pantoja T, Corbalán J, Moreno G, Letelier LM, Vera C. Non-hormonal interventions for hot flushes in women with a history of breast cancer. Cochrane Database Syst Rev. 2010.

3.1.2. List

	Randomized Controlled Trials	Systematic Reviews or Guidelines
2016	Lesi G, Razzini G, Musti MA, et al.. Acupuncture As an Integrative Approach for the Treatment of Hot Flashes in Women With Breast Cancer: A Prospective Multicenter Randomized Controlled Trial (AcCliMaT). J Clin Oncol. 2016;34(15): 1795-80. [176599]	Chien 2017, Tao 2017
2015	Mao JJ, Bowman MA, Xie SX et al . Electroacupuncture versus gabapentin for hot flashes among breast cancer survivors: a randomized placebo-controlled trial. J Clin Oncol 33(31):3615– 3620	Tao 2017, Chien 2017, Johns 2016 Ψ
	Mao JJ, Xie SX, Bowman MA, Bruner D, Li SQ, DeMichele A, et al. A randomized placebo-controlled trial of acupuncture and gabapentin for hot flashes among breast cancer survivors. Cancer Res. 2015; 75(9 suppl. 1).	Chien 2017
2014	Bao T, Cai L, Snyder C, Betts K, Tarpinian K, Gould J, et al. Patient-reported outcomes in women with breast cancer enrolled in a dual-center, double-blind, randomized controlled trial assessing the effect of acupuncture in reducing aromatase inhibitor-induced musculoskeletal symptoms. Cancer 2014;120:381-9	Wang 2018, Chien 2017, Lopez-Junior 2016, Chen 2016, Chiu 2016, Garcia 2015
	Hervik J, Mjaland O. Long term follow up of breast cancer patients treated with acupuncture for hot flashes. Springerplus. 2014; 3:141	Chien 2017, Chen 2016
	Ting B, Ling C, Claire S et al (2014) Patient-reported outcomes in women with breast cancer enrolled in a dual-center, double-blind, randomized controlled trial assessing the effect of acupuncture in reducing aromatase inhibitor-induced musculoskeletal symptoms. Cancer 120(3):381–389	Tao 2017
2013	Bokmand S, Flyger H. Acupuncture relieves menopausal discomfort in breast cancer patients: A prospective, double blinded, randomized study. Breast 2013;22:320-3. [161367].	Wang 2018, Lopez-Junior 2016, Chen 2016, Chiu 2016, Garcia 2015 Ψ
	Susanne B, Henrik F (2013) Acupuncture relieves menopausal discomfort in breast cancer patients: a prospective, double blinded, randomized study. Breast 22(3):320–323	Tao 2017
2012	Frisk J, Kallstrom AC, Wall N, Fredrikson M, Hammar M. Acupuncture improves health-related qualityof- life (HRQoL) and sleep in women with breast cancer and hot flushes. Support Care Cancer. 2012; 20 (4):715±24.	Chien 2017, Chen 2016, Garcia 2015
	Liljegren A, Gunnarsson P, Landgren BM, Robéus N, Johansson H, Rotstein S. Reducing vasomotor symptoms with acupuncture in breast cancer patients treated with adjuvant tamoxifen: A randomized controlled trial. Breast Cancer Res Treat 2012;135:791-8.	Wang 2018, Tao 2017, Lopez-Junior 2016, Chen 2016, Chiu 2016, Garcia 2015
2010	Hervik J, Mjåland O. Quality of life of breast cancer patients medicated with anti-estrogens, 2 years after acupuncture treatment: A qualitative study. Int J Womens Health 2010;2:319-25.	Wang 2018, Tao 2017
	Walker EM, Rodriguez AI, Kohn B, Ball RM, Pegg J, Pocock JR, et al. Acupuncture versus venlafaxine for the management of vasomotor symptoms in patients with hormone receptor-positive breast cancer: A randomized controlled trial. J Clin Oncol 2010;28:634-40.	Wang 2018, Tao 2017, Chien 2017, Chen 2016, Johns 2016, Garcia 2015
2009	Hervik J, Mjåland O. Acupuncture for the treatment of hot flashes in breast cancer patients, a randomized, controlled trial. Breast Cancer Res Treat 2009;116:311-6.	Wang 2018, Tao 2017, Chien 2017, Lopez-Junior 2016, Chiu 2016, Garcia 2015 Ψ

	Randomized Controlled Trials	Systematic Reviews or Guidelines
2008	Frisk J, Wang, Carlhäll S, Källström AC, Lindh-Astrand L, Malmström A, Hammar M. Long-term follow-up of acupuncture and hormone therapy on hot flushes in women with breast cancer: A prospective, randomized, controlled multicenter trial. Climacteric 2008;11:166-74	Wang 2018, Tao 2017, Chien 2017, Lopez-Junior 2016, Chen 2016, Chiu 2016, Garcia 2015 Ψ
2007	Deng G, Vickers AJ, Yeung KS, D'Andrea GM, Xiao H, Heerdt AS, et al.Randomized, controlled trial of acupuncture for the treatment of hot flashes in breast cancer patients. Journal of Clinical Oncology 2007;23(6):5584–90	Wang 2018, Tao 2017, Chien 2017, Chiu 2016, Garcia 2015, Rada 2010 Ψ
2006	Nedstrand E, Wyon Y, Hammar M, Wijma K. Psychological well-being improves in women with breast cancer after treatment with applied relaxation or electro-acupuncture for vasomotor symptom. J Psychosom Obstet Gynaecol 2006;27:193-9.	Wang 2018, Tao 2017, Chien 2017, Chen 2016, Garcia 2015 Ψ
2005	Nedstrand E, Wijma K, Wyon Y, Hammar M. Vasomotor symptoms decrease in women with breast cancer randomized to treatment with applied relaxation or electro-acupuncture: a preliminary study. Climacteric. 2005; 8(3):243±50.	Chien 2017, Chen 2016, Chiu 2016
2001	Davies FM. The effect of acupuncture treatment on the incidence and severity of hot flushes experienced by women following treatment for breast cancer: A comparison of traditional and minimal acupuncture. Wang, Eur J Cancer 2001;37:S438	Wang 2018, Chen 2016