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Cancer-related cognitive impairment

Troubles cognitifs chez le patient cancéreux

1. Systematic Reviews and Meta-Analysis

1.1. Generic Acupuncture

1.1.1. Dosa 2026

Dosa 2026 Dosa N, Limvaree I, Pinto CB, Saleh Velez F, Kaposzta Z, Szarvas Z, et al. Chemotherapy-related cognitive impairment and non-pharmacological interventions targeting the nervous system: a systematic review. Front Psychiatry. 2026;17:1789794. https://doi.org/10.3389/fpsyt.2026.1789794

Background	Chemotherapy-related cognitive impairment (CRCI) represents an increasingly recognized problem in the growing cancer survivor population within the US and worldwide. CRCI is characterized by deficits in memory, sustained attention, and executive function, which significantly worsens the cancer survivors' quality of life. An increasing number of studies have been conducted using novel intervention approaches aimed at mitigating CRCI. In this systematic review, we sought to summarize the current evidence of cognitive improvement in cancer survivors receiving non-pharmacological interventions with neurostimulatory effects following chemotherapy.
Methods	We screened five databases (Embase, MEDLINE, PubMED, Scopus, and PsycINFO) for original articles reporting the administration of any type of brain stimulation or complementary/alternative therapies targeting the central and/or peripheral nervous system to improve cognitive outcomes in cancer survivors reporting CRCI. We systematically extracted information from each eligible study using participant, intervention, comparison, outcome(s), and study design (PICOS) framework according to Cochrane recommendations. We used the critical appraisal tool by Joanna Briggs Institute to assess the risk of bias.
Results	After screening 2,708 manuscripts, we performed a full-text review of 77 papers and identified 17 studies that met our inclusion criteria: nine randomized controlled trials, four case reports, one case series, two quasi-experimental study, and one cohort study. We identified seven studies which focused on CRCI and 10 others where cognitive function was properly reported for inclusion. Subjective and objective cognitive outcome measures reflecting overall performance, attention, working memory, processing speed, and quality of life with separate cognitive function reporting were assessed in patient(s) treated with transcranial direct current stimulation, transcranial magnetic stimulation, multisensory stimulation, Flexyx neurotherapy system, **acupuncture, and electroacupuncture**. Mild improvements in some of the cognitive outcome measures were observed in all studies. The weaknesses of these studies can be attributed to insufficient statistical power and testing, lack of a control group, randomization, blinding, and incorrect statistical methods.

Conclusion	We found only a handful of trials reporting cognitive outcomes in CRCI interventions, with small sample sizes and biased study designs limiting the validity of the statistically significant findings. Our systematic review provides rationale for assessing the impact of non-pharmacological neurostimulatory techniques on CRCI in large-scale randomized controlled trials.

1.1.1.1. Xin 2026

Xin Z, Li J, Hu Y, Zhang H, Liu T, Xiong Z, Sun C, Sun C, Song H, Qin L, Li S, Dai X, Zhang S, Yan S. Effects of non-pharmacological interventions in patients with cancer-related cognitive impairment: A meta-analysis. Int J Nurs Stud. 2026 Feb;174:105287. https://doi.org/10.1016/j.ijnurstu.2025.105287

Background	Cancer-related cognitive impairment is a significant public-health issue, and non-pharmacological therapies are widely used as primary treatments. However, the comparative effectiveness of these interventions remains uncertain.
Methods	Randomized controlled trials of non-pharmacological interventions for cancer-related cognitive impairment were identified through searches of PubMed, Web of Science, EMBASE, the Cochrane Central Register of Controlled Clinical Trials, Chinese National Knowledge Infrastructure, and SinoMed through February 2025. Extracted data included study characteristics, participant information, intervention types, and outcomes. Treatment effects were expressed as standardized mean difference with 95% confidence intervals and pooled using random-effects models. Both subjective and objective cognitive outcomes were analyzed, including attention, executive function, memory, processing speed, and language. The protocol was registered on PROSPERO (CRD42023457681).
Results	Sixty eligible studies involving 5129 patients were included. Interventions were classified into six categories: cognitive behavioral therapy-based interventions, cognitive training, physical activity, mindfulness-based interventions, multi-modal management, and **acupuncture**. Significant improvements in subjective cognition were observed with cognitive behavioral therapy-based interventions (7 comparisons, standardized mean difference 0.53, 95% CI 0.22 to 0.84, I^2 = 58%), physical activity (8 comparisons, standardized mean difference 0.86, 95% CI 0.39 to 1.14, I^2 = 81%), and mindfulness-based interventions (12 comparisons, standardized mean difference 0.43, 95% CI 0.15 to 0.72, I^2 = 66%). For objective cognition, significant improvements were found with cognitive behavioral therapy-based interventions (1 comparison, standardized mean difference 0.73, 95% CI 0.18 to 1.28), cognitive training (7 comparisons, standardized mean difference 1.23, 95% CI 0.61 to 1.85, I^2 = 93%), mindfulness-based interventions (1 comparison, standardized mean difference 0.48, 95% CI 0.01 to 0.96), and acupuncture (3 comparisons, standardized mean difference 1.19, 95% CI 0.06 to 2.32, I^2 = 95%).
Conclusions	Randomized evidence suggests that several non-pharmacological interventions can improve subjective and/or objective cognition in adults with cancer-related cognitive impairment. However, substantial heterogeneity and generally low certainty of evidence limit confidence in these findings. Intervention choice should be individualized, and further well-powered, standardized trials are required.

1.1.1.2. Zhang 2026

Zhang H, Liu J, He F, Ren K, Wang S. Effectiveness and Safety of Acupuncture for Cancer-Related Cognitive Impairment: A Systematic Review and Meta-Analysis. J Integr Complement Med. 2026;27683605261436293. https://doi.org/10.1177/27683605261436293

Background	Cancer-related cognitive impairment (CRCI) is a prevalent and clinically significant sequela of cancer and its treatment, markedly reducing quality of life. As a core component of Traditional Chinese Medicine, acupuncture is a potential therapeutic intervention for CRCI; however, conclusive evidence on its efficacy and safety is lacking due to fragmented and methodologically limited studies.
Objective	This systematic review and meta-analysis aimed to evaluate the efficacy and safety of acupuncture for CRCI.
Methods	We systematically searched eight databases from inception to February 1, 2025, for randomized controlled trials (RCTs) in adults with CRCI comparing acupuncture with control interventions (e.g., conventional care, sham acupuncture, and other active therapies). Risk of bias was assessed using the Cochrane tool (v1). Meta-analyses used RevMan 5.3. Evidence certainty was evaluated with the GRADE framework. Prespecified subgroup analyses explored heterogeneity by acupuncture modality, treatment duration, cancer treatment phase, and cancer type.
Results	Forty-four RCTs (n = 3,783) were included. Versus conventional treatment, acupuncture significantly improved Mini-Mental State Examination (MMSE) scores (mean difference [MD] = 2.34, 95% confidence interval [CI] [1.84, 2.85], P < 0.00001), Montreal Cognitive Assessment (MoCA) scores (MD = 1.48, 95% CI: [1.15, 1.82], P < 0.00001), and reduced postoperative cognitive dysfunction (POCD) incidence (risk ratio [RR] = 0.49, 95% CI: [0.41, 0.60], P < 0.00001). Compared with sham acupuncture, acupuncture improved MMSE (MD = 2.48, 95% CI: [1.55, 3.41], P < 0.00001) and MoCA (MD = 1.52, 95% CI: [0.16, 2.88], P = 0.03) scores, though the latter was imprecise. Acupuncture demonstrated no significant benefit for the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire Core 30 cognitive subscale compared with sham acupuncture (P = 0.11) or other active therapies (P = 0.15). Subgroup analyses identified treatment duration, acupuncture modality, and cancer type as major heterogeneity sources. Safety reporting was often incomplete, yet all documented adverse events were mild and transient. Grading of Recommendations Assessment, Development and Evaluation evidence certainty was low to very low.
Conclusion	Acupuncture may improve global cognitive function and reduce POCD incidence in CRCI. However, the safety profile requires further confirmation. Current evidence is limited by methodological weaknesses, substantial heterogeneity, and imprecision, highlighting the need for rigorous, high-quality RCTs with standardized protocols, objective biomarkers, and comprehensive safety monitoring to define acupuncture's role in CRCI management.