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Post-Stroke Depression

Dépression post-AVC : évaluation de l'acupuncture

1. Systematic Reviews and Meta-Analysis

1.1. Generic Acupuncture

1.1.1. Li 2024

Li Y, Wang Y, Gao L, Meng X, Deng Q. Effect of nonpharmacological interventions on poststroke depression: a network meta-analysis. Front Neurol. 2024 Apr 5;15:1376336. https://doi.org/10.3389/fneur.2024.1376336

Purpose	To investigate the effects of nonpharmacological interventions (NPIs) on poststroke depression (PSD) in stroke patients.
Methods	Computer searches were conducted on the PubMed, Embase, Cochrane Library, Web of Science, China National Knowledge Infrastructure (CNKI), China Science and Technology Journal Database (VIP), and Wanfang databases from their establishment to December 2023. The selection was made using the inclusion and exclusion criteria, and 40 articles were included to compare the effects of the 17 NPIs on patients with PSD.
Results	Forty studies involving seventeen interventions were included. The network findings indicated that compared with conventional therapy (COT), superior PSD improvement was observed for cognitive behavioral therapy (CBT) + **acupoint acupuncture** (CBTA) (mean difference [MD], -4.25; 95% CI, -5.85 to -2.65), team positive psychotherapy (MD, -4.05; 95% CI, -5.53 to -2.58), music therapy (MT) + positive psychological intervention (MD, -2.25; 95% CI, -3.65 to -0.85), CBT (MD, -1.52; 95% CI, -2.05 to -0.99), mindfulness-based stress reduction (MD, -1.14; 95% CI, -2.14 to -0.14), MT (MD, -0.95; 95% CI, -1.39 to -0.52), **acupoint acupuncture** + MT (AAMT) (MD, -0.69; 95% CI, -1.25 to -0.14). Furthermore, CBT (MD, -3.87; 95% CI, -4.57 to -3.17), AAMT (MD, -1.02; 95% CI, -1.41 to -0.62), **acupressure** + MT (MD, -0.91; 95% CI, -1.27 to -0.54), and narrative care + acupressure (MD, -0.74; 95% CI, -1.19 to -0.29) demonstrated superior Pittsburgh Sleep Quality Index (PSQI) improvement compared with COT.
Conclusion	Evidence from systematic reviews and meta-analyses suggests that CBTA improves depression in patients with PSD. Moreover, CBT improves sleep in these patients. Additional randomized controlled trials are required to further investigate the efficacy and mechanisms of these interventions.

1.1.2. Xiao 2024 (combined with repetitive transcranial magnetic stimulation)

Xiao K, Li X, Hu W, Li X. Acupuncture combined with repetitive transcranial magnetic stimulation for the treatment of post-stroke depression: a systematic evaluation and meta-analysis based on a randomised controlled trial. Front Neurol. 2024 May 16;15:1360437. https://doi.org/10.3389/fneur.2024.1360437

Objective	This study aimed to systematically assess the efficacy of combining acupuncture with repetitive transcranial magnetic stimulation (rTMS) in treating post-stroke depression (PSD).
Methods	We conducted a comprehensive search of eight major domestic and international databases, including the China Knowledge Network, from inception until December 2023. Included were randomized controlled trials that investigated acupuncture combined with rTMS for PSD. The screening process adhered to predetermined inclusion and exclusion criteria, and study quality was assessed using Cochrane Handbook 5.1 guidelines. Meta-analysis was conducted using RevMan 5.4 software.
Results	**Twelve studies involving 800 patients** were included in the analysis. The meta-analysis showed that acupuncture combined with rTMS significantly improved the clinical effectiveness rate (RR = 1.19, 95% CI: 1.12 to 1.27, $p < 0.00001$) and reduced scores on several scales: Hamilton Depression Scale (HAMD) (MD = -3.35, 95% CI: -3.79 to -2.90, $p < 0.00001$), Self-Depression Scale (SDS) (MD = -9.57, 95% CI: -12.26 to -6.89, $p < 0.00001$), Chinese Medicine Symptom Score (MD = -3.34, 95% CI: -3.76 to -2.91, $p < 0.00001$), Pittsburgh Sleep Quality Scale (MD = -3.91, 95% CI: -4.58 to -3.25, $p < 0.00001$), and National Institutes of Health Stroke Scale (NIHSS) (MD = -2.77, 95% CI: -3.21 to -2.32, $p < 0.00001$). Furthermore, acupuncture combined with rTMS treatment improved cognitive functioning (MMSE, MoCA scores) ($p < 0.00001$) and ability to perform activities of daily living scores (MD = 10.40, 95% CI: 9.53 to 11.28, $p < 0.00001$). Additionally, it was found to reduce interleukin 6, tumor necrosis factor alpha, interleukin 1β, and increase 5-hydroxytryptamine and brain-derived neurotrophic factor levels ($p < 0.001$).
Conclusion	Acupuncture combined with rTMS therapy is recommended for treating PSD, as it effectively improves clinical outcomes, alleviates depressive symptoms, enhances cognitive function, and daily living capabilities, and modulates inflammatory responses and neurotransmitter levels. However, it is important to note that the limitations of the sample size and quality of the included studies warrant the need for more high-quality research to validate these conclusions.

1.1.3. Yi 2024

Yi Y, Zhao W, Lv S, Zhang G, Rong Y, Wang X, Yang J, Li M. Effectiveness of non-pharmacological therapies for treating post-stroke depression: A systematic review and network meta-analysis. Gen Hosp Psychiatry. 2024 Sep-Oct;90:99-107. https://doi.org/10.1016/j.genhosppsych.2024.07.011

Objective	Post-stroke depression (PSD) is a common neurological and psychiatric sequelae following a stroke, often surpassing the primary effects of the stroke due to its strong correlation with high mortality rates. In recent years, non-pharmacological therapy has garnered significant attention as a supplementary treatment for PSD, becoming widely adopted in clinical practice. However, the efficacy of specific intervention strategies remains unclear. This study aimed to conduct a network meta-analysis (NMA) of published studies to compare the efficacy of different non-pharmacological therapies for treating PSD.

Method	We systematically searched five databases from inception through March 2024 to identify randomized controlled trials (RCTs) evaluating non-pharmacological therapies for the treatment of PSD. We considered individual intervention and intervention class. Intervention classes included traditional Chinese medicine (TCM), non-invasive electrotherapy stimulation (NIES), psychotherapy (PT), exercise therapy, hyperbaric oxygen, and combined interventions. The NMA was conducted using R and Stata software, following a frequency-based methodology. Assessment of methodological quality and risk of bias was conducted using the Risk of Bias assessment tool 2.0. Therapies were ranked using the P-score, and box-plots visualization, meta-regression, and sensitivity analysis, were performed to assess transitivity, heterogeneity, and consistency, respectively.
Results	The NMA included 43 studies with a total of 3138 participants. Random-effects models revealed significant efficacy for **acupuncture (ACUP)** (P-score = 0.92; pooled standardized mean difference (95% CI): -3.12 (-4.63 to -1.60)) and transcranial direct current stimulation (P-score = 0.85; -2.78 (-5.06 to -0.49)) compared to the treatment as usual (TAU) group. In categorical comparisons, TCM_PT (P-score = 0.82; -1.91 (-3.54 to -0.28)), TCM (P-score = 0.79; -1.65 (-2.33 to -0.97)), and NIES (P-score = 0.74; -1.54 (-2.62 to -0.46)) showed significant differences compared to TAU group. Furthermore, our results indicated no significant difference between PT and the control groups. However, Confidence in Network Meta-Analysis results indicated very low overall evidence grade.
Conclusion	Limited evidence suggests that ACUP may be the most effective non-pharmacological therapy for improving PSD, and TCM_PT is the best intervention class. However, the evidence quality is very low, underscoring the need for additional high-quality RCTs to validate these findings, particularly given the limited number of RCTs available for each therapy.

1.1.4. Zhang 2024 (plus music therapy)

Zhang J, Zhao Y, Li H, Yang Y, Tang Q. Effectiveness of acupuncture plus music therapy for post-stroke depression: Systematic review and meta-analysis. Medicine (Baltimore). 2024 Sep 13;103(37):e39681. https://doi.org/10.1097/MD.0000000000039681

Backgound	Post-stroke depression (PSD) is a prevalent complication of stroke that adversely affects patient outcomes. The etiology of PSD is complex, and no universally effective treatment exists. Acupuncture, with its historical use, combined with music therapy, presents a novel approach for PSD treatment. This study aims to systematically evaluate the clinical efficacy of combining acupuncture with music therapy for PSD through a meta-analysis.
Methods	We systematically searched both Chinese and English literature in PubMed, Embase, Web of Science, China National Knowledge Infrastructure, Wanfang, and the Chinese Science and Technology Periodical Database (VIP Database) for randomized controlled trials evaluating acupuncture combined with music therapy for PSD. Two independent evaluators conducted quality assessments and data extraction. Statistical analyses were performed using RevMan 5.4 and Stata 18.0 software.
Results	This article contains **11 studies, involving a total of 698 patients**. The results of the meta-analysis showed that, compared with the control group, the test group showed significant improvement on multiple outcome measures: HAMD score [mean difference (MD) = -3.18, 95% confidence interval (CI) (-3.61, -2.76), P < .00001], Self-Rating Depression Scale score [MD = -5.12, 95% CI (-6.61, -3.63), P < .00001], Pittsburgh sleep quality index score [MD = -2.40, 95% CI (-2.96, -1.84), P < .00001], BI score [MD = 14.16, 95% CI (4.37, 23.94), P = .005] were all significantly lower, significantly higher effectiveness [risk ratio = 1.21, 95% CI (1.11, 1.33), P < .0001]. These differences were also statistically significant.

Conclusion	The use of acupuncture combined with music therapy is effective in reducing depression in PSD patients.

1.1.5. Lam 2023

Lam Ching W, Li HJ, Guo J, Yao L, Chau J, Lo S, Yuen CS, Ng BFL, Chau-Leung Yu E, Bian Z, Lau AY, Zhong LL. Acupuncture for post-stroke depression: a systematic review and network meta-analysis. BMC Psychiatry. 2023 May 4;23(1):314. https://doi.org/10.1186/s12888-023-04749-1

Background	Patients with post-stroke depression (PSD) usually experience anxiety, hopelessness, and insomnia, which have a negative impact on their daily activities and post-stroke rehabilitation. Acupuncture (AC), as a minimally invasive technique, has become a popular choice for improving depression symptoms. However, it is still unclear which therapy is associated with the best outcomes for PSD. In this review, we aimed to explore the impact of AC in alleviating symptoms of PSD and to evaluate the difference in effectiveness between AC combined with pharmacotherapies and various non-pharmacotherapies.
Methods	Six databases and three clinical trials registration platforms were searched from inception to March 2023. Randomized clinical trial comparing needle-based AC with pharmacotherapy, and other non-pharmacotherapy or invalid group were included. Two independent reviewers identified eligible studies, and collected data using a pre-made form. A Bayesian network meta-analysis was conducted to assess and compare different techniques using RStudio 3.6.0 with the package 'GEMTC' V.0.8.1. The primary outcome was the efficacy for PSD assessed by scales measuring depressive symptoms. The secondary outcomes were effectiveness for neurological function and the quality of life. The ranking probabilities for all treatment interventions was performed using the Surface Under the Cumulative Ranking curve (SUCRA). The risk of bias was assessed by using the Revised Cochrane Risk of Bias tool 2.
Results	**Sixty-two studies**, involving 5308 participants published from 2003 to 2022, were included. The results showed that compared with western medicine (WM) (defined as pharmacotherapy for PSD), AC alone or with repetitive transcranial magnetic stimulation (RTMS), Traditional Chinese medicine (TCM) alone or with WM, were superior for alleviating depression symptoms. Compared to Usual Care, AC alone or plus other therapies could significantly decrease scores on the Hamilton Depression Rating scale. According to result of SUCRA, AC plus RTMS had the highest probability of improving depressive symptoms with a probability of 49.43%.
Conclusions	The results of this study indicate that AC alone or combined with other therapies appears to be effective in improving depression symptoms of stroke survivors. Moreover, in comparison to WM, AC alone or plus RTMS, TCM, TCM with WM, or WM, were more effective in improving depression symptoms of PSD. Also, AC with RTMS seems to be the most effective with the highest probability.

1.1.6. Li 2023 (combined with antidepressants)

Li C, Chen S, Liu S, Mu Y, Su M. Effect of acupuncture combined with antidepressants on post-stroke depression: A network meta-analysis of nine acupuncture therapy. Front Neurol. 2023 Mar 23;14:979643. https://doi.org/10.3389/fneur.2023.979643

Background	Post-stroke depression (PSD) is a common psychiatric complication of mental disorders after stroke. Acupuncture for PSD is effective and has few adverse effects. As a classical complementary and alternative therapy, acupuncture is often used in combination with antidepressants for PSD. However, there is a wide variety of acupuncture therapies, and the efficacy of different acupuncture varies. In this study, a network meta-analysis (NMA) was used to assess the clinical efficacy of different acupuncture combined with antidepressants for the treatment of PSD.
Methods	A comprehensive search of PubMed, The Cochrane Library, EMbase, Web of Science, CNKI, CBM, VIP, and Wan-Fang databases for published randomized controlled trials of acupuncture combined with antidepressants for the treatment of PSD was conducted. The time frame for the literature search was from the date of database creation to April 30, 2022. The Cochrane risk of bias tool for randomized trials (RoB 2.0) was used to evaluate the bias risk of the included studies. Data analysis was performed by STATA 14.0 software.
Results	A total of **38 literatures with 2,898 patients** involving nine acupuncture therapies were included. NMA results were as follows: moxibustion plus antidepressants had the best efficacy in terms of improving total effective rate. Conventional acupuncture plus antidepressants was the most effective in improving HAMD scores. In terms of improving SDS scores, acupressure plus antidepressants was the most effective. In terms of improving NIHSS scores, moxibustion plus antidepressants showed the best results.
Conclusion	A comparison of the efficacy indicators of the nine different acupuncture therapies combined showed that moxibustion plus antidepressants, conventional acupuncture plus antidepressants and acupressure plus antidepressants were superior in the treatment of PSD. Based on the shortcomings of the existing studies, this conclusion needs to be validated by additional high-quality randomized controlled trials.

1.1.7. Zhang 2022

Zhang J, Song Z, Gui C, Jiang G, Cheng W, You W, Wang Z, Chen G. Treatments to post-stroke depression, which is more effective to HAMD improvement? A network meta-analysis. Front Pharmacol. 2022 Dec 19;13:1035895. https://doi.org/10.3389/fphar.2022.1035895

Introduction	Post-stroke depression (PSD) is a common mental health problem after cerebrovascular accidents. There are several treatments that have been shown to be effective in treating post-stroke depression. However, it is not clear which treatment is more effective.
Methods	In this meta-analysis, an appropriate search strategy was used to search eligible randomized controlled trials (RCTs) on different treatments to treat patients with Post-stroke depression published up to December 2021 from the CNKI, PubMed, and Cochrane Library. We assessed the mean difference or odds ratio between each treatment and placebo and summarized them as the average and 95% confidence interval (CI) by conducting Bayesian network meta-analyses.
Results	By constructing a Bayesian network meta-analysis, we found that acupuncture combined with fluoxetine (vs placebo MD, -8.9; 95% CI, [-15, -2.9]) or paroxetine (vs placebo MD,-8.5; 95% CI, [-15, -2.5]) was the most effective for change in Hamilton depression scale (HAMD) at the end of the 4th week. For change in Hamilton depression scale at the end of the 8th week, rTMS combined with paroxetine (vs placebo MD, -13; 95% CI, [-17, -7.9]) had the greatest amount of change. The efficacy of medication combined with adjuvant therapy was also superior for the percentage of patients with Hamilton depression scale change over 50%.

Discussion	The combination of antidepressants with adjuvant therapy may enhance the efficacy of antidepressants and achieve better results than antidepressant monotherapy in both Hamilton depression scale changes at the end of week 4 or 8 and 50% Hamilton depression scale improvement rate. Acupuncture combined with fluoxetine treatment was more effective in the treatment of post-stroke depression at week 4, while rTMS combined with paroxetine was more effective at week 8. Further research is needed to determine whether acupuncture combined with fluoxetine is better than rTMS combined with paroxetine for post-stroke depression at week 8.

1.1.8. Liu 2021

Liu R, Zhang K, Tong QY, Cui GW, Ma W, Shen WD. Acupuncture for post-stroke depression: a systematic review and meta-analysis. BMC Complement Med Ther. 2021;21(1):109. [217736]. https://doi.org/10.1186/s12906-021-03277-3

Background	Acupuncture for post-stroke depression (PSD) has been evolving, but uncertainty remains. To assess the existing evidence from randomized clinical trials (RCTs) of acupuncture for PSD, we sought to draw conclusions by synthesizing RCTs.
Methods	An exhaustive literature search was conducted in seven electronic databases from their inception dates to April 19, 2020, to identify systematic reviews (SRs) and meta-analyses (MAs) on this topic. The primary RCTs included in the SRs/MAs were identified. We also conducted a supplementary search for RCTs published from January 1, 2015, to May 12, 2020. Two reviewers extracted data separately and pooled data using RevMan 5.3 software. The quality of evidence was critically appraised with the Grades of Recommendation, Assessment, Development and Evaluation (GRADE) system.
Results	A total of **17 RCTs involving 1402 patients** were included. Meta-analysis showed that participants who received a combination of acupuncture and conventional treatments exhibited significantly lower scores on the HAM-D17, HAM-D24 and HAM-D (MD, − 5.08 [95% CI, − 6.48 to − 3.67], I2 = 0%), (MD, − 9.72 [95% CI, − 14.54 to − 4.91], I2 = 65%) and (MD, − 2.72 [95% CI, − 3.61 to − 1.82], respectively) than those who received conventional treatment. However, there was no significant difference in acupuncture versus antidepressants in terms of the 17-item, 24-item and HAM-D scales (MD, − 0.43 [95% CI, − 1.61 to 0.75], I2 = 51%), (MD, − 3.09 [95% CI, − 10.81 to 4.63], I2 = 90%) and (MD, − 1.55 [95% CI, − 4.36 to 1.26], I2 = 95%, respectively). For adverse events, acupuncture was associated with fewer adverse events than antidepressants (RR, 0.16 [95% CI, 0.07 to 0.39], I2 = 35%), but there was no significant difference in the occurrence of adverse events between the combination of acupuncture and conventional treatments versus conventional treatments (RR, 0.63 [95% CI, 0.21 to 1.83], I2 = 38%). The quality of evidence was low to very low due to the substantial heterogeneity among the included studies.
Conclusions	The current review indicates that acupuncture has greater effect on PSD and better safety profile than antidepressants, but high-quality evidence evaluating acupuncture for PSD is still needed.

1.1.9. Wang 2021

Wang X, Xiong J, Yang J, Yuan T, Jiang Y, Zhou X, Liao K, Xu L. Meta-analysis of the clinical effectiveness of combined acupuncture and Western Medicine to treat post-stroke depression. Journal of TCM. 2021;41(1):6-16. [216956]. doi

Objective	To evaluate the clinical efficacy and safety of combined acupuncture and Western Medicine in the treatment of post-stroke depression using a meta-analysis.

Methods	The China National Knowledge Infrastructure Database, Wanfang Database, China Science and Technology Journal Database, Chinese Biomedical Literature Database, PubMed, Embase, and the Cochrane Library were searched from their establishment to August 2018 for randomized controlled trials (RCTs) of combined acupuncture and Western Medicine to treat post-stroke depression. Two researchers independently extracted and cross-checked data, and then applied the modified Jadad scale and the Cochrane-recommended assessment method to evaluate the risk of bias. Review Manager 5.3 was used to conduct the meta-analysis.
Results	A total of **1860 patients in 24 RCTs** were analyzed. The results of the Meta-analysis showed that: (a) The effective rate of acupuncture + fluoxetine hydrochloride vs fluoxetine hydrochloride was significant [relative risk (RR) = 1.16, 95% confidence interval (CI) (1.08, 1.26)], as was that of acupuncture + flupentixol/melitracen vs flupentixol/melitracen [RR = 1.23, 95% CI (1.10, 1.37)]. (b) When analyzing Hamilton Depression Scale (HAMD)-17 scores, six trials showed that acupuncture combined with Western Medicine was superior to Western Medicine alone, and could relieve the depressive symptoms of patients. For HAMD-24 scores, five trials were included for acupuncture + fluoxetine hydrochloride vs fluoxetine hydrochloride, with significance at 2 weeks [WMD = □6.51, 95% CI(□ 8.62, □ 4.40)], as well as at 4 weeks [WMD = □8.40, 95% CI (□11.86, □4.94)] and 8 weeks. ©For the activities of daily living scale, acupuncture + fluoxetine hydrochloride vs fluoxetine hydrochloride [WMD = 22.65, 95% CI (18.34, 26.95)], acupuncture + flupentixol/melitracen vs flupentixol/melitracen [WMD = 8.08, 95% CI (2.57, 13.59)], acupuncture + sertraline hydrochloride vs sertraline hydrochloride [WMD = 6.94, 95% CI (3.59, 10.29)], and acupuncture + doxepin hydrochloride vs doxepin hydrochloride [WMD = 18.80, 95% CI (15.84, 21.76)] had significance. (d) For Treatment Emergent Symptom Scale scores, there was significance in all four included studies.
Conclusion	The therapeutic effects of acupuncture combined with Western Medicine on post-stroke depression are often better than those of Western Medicine alone, and fewer adverse reactions occur. However, more high-quality RCTs are needed to further confirm these findings.

1.1.10. Zhang 2021 (combined with antidepressants)

Zhang K, Cui G, Gao Y, Shen W. Does acupuncture combined with antidepressants have a better therapeutic effect on post-stroke depression? A systematic review and meta-analysis. Acupunct Med. 2021 Oct;39(5):432-440. https://doi.org/10.1177/0964528420967675

Objective	To evaluate the effectiveness of acupuncture combined with antidepressants in the treatment of post-stroke depression (PSD).
Methods	The following electronic databases were systematically searched: PubMed, Embase, Cochrane Central Register of Controlled Trials, Web of Science, Wanfang Data, China National Knowledge Infrastructure and Chongqing VIP database. The primary outcome was the Hamilton depression scale (HAMD) score. Two independent investigators screened for eligible clinical trials. The Cochrane risk of bias tool was used to assess the methodological quality, and RevMan 5.3 was applied for meta-analysis.
Results	**Thirteen randomized controlled trials** (RCTs) involving **904 participants** were included in the study. The results of this meta-analysis showed that, compared with antidepressants alone, acupuncture combined with antidepressants led to a significant decrease in the HAMD score (mean difference (MD): −3.60, 95% confidence interval (CI): −4.25 to −2.95, $P < 0.001$), had a better effective rate (risk ratio (RR): 1.33, 95% CI 1.19 to 1.49, $P < 0.001$) and lower National Institutes of Health Stroke Scale (NIHSS) scores (MD: −2.39, 95% CI: −3.37 to −1.41, $P < 0.001$), and led to a significant increase in the Barthel index scores (MD: 8.10, 95% CI: 5.25 to 10.94; $P < 0.001$).

Conclusions	Acupuncture combined with antidepressants showed a more favourable effect on the treatment of PSD than antidepressants alone. However, given the limited methodological quality, more high-quality RCTs conducted based on the Consolidated Standards of Reporting Trials (CONSORT) and Standards for Reporting Interventions in Clinical Trials of Acupuncture (STRICTA) guidelines are necessary.

1.1.11. Zhang 2021 (vs antidepressant therapy)

Zhang L, Chen B, Yao Q, Chen W, Yang W, Yang W, He L, Zhang Y. Comparison between acupuncture and antidepressant therapy for the treatment of poststroke depression: Systematic review and meta-analysis. Medicine (Baltimore). 2021;100(22). [217816]. doi

Background	In this paper, a systematic review and meta-analysis of published randomized controlled trials (RCTs) was conducted to compare the efficacies of acupuncture and antidepressant therapy for the treatment of poststroke depression (PSD).
Methods	The research team searched RCTs published on PubMed; Medline; Cochrane library; Chinese National Knowledge Infrastructure (CNKI); Wanfang; Embase; Scopus, and Sinomed from their respective establishments to January 2019. We evaluated the Hamilton Depression Rating Scale (HAMD) scores, Treatment Emergent Symptom Scale (TESS) scores, National Institute of Health Stroke Scale (NIHSS) scores, and total clinical efficacy using fixed effects models.
Results	Fourteen RCTs, representing a total of 1124 patients, were studied.showed that acupuncture was more effective in improving HAMD scores at 3 weeks after administration (mean difference [MD] = -1.17, 95%CI = -2.18 to -0.16), at 4 weeks (MD = -4.44, 95% CI = -5.64 to -3.23), at 6 weeks (MD = -1.02, 95% CI = -1.68 to -0.36), and at 8 weeks (MD = -4.33, 95% CI = -4.96 to -3.70). Similarly, acupuncture more dramatically decreased NIHSS scores (MD = -2.31, 95% CI = -2.53 to -2.09), and TESS scores (MD = -4.70, 95% CI = -4.93 to -4.48) than conventional Western medicinal therapy. Further, the total clinical efficacy in the acupuncture group was significantly higher than in the antidepressants group (risk ratio [RR] = 1.15, 95% CI = 1.08-1.21).
Conclusions	The results of this study suggest that acupuncture not only can reduce the severity of PSD, but also has significant effects on decreasing the appearance of other adverse events.

1.1.12. Huang 2018

Huang Yingjie, Li Lixia, Zhou Yalan, Wu Juan, Lin Guohua, Ming Kangwen, Zhang Qufei. [A Meta-analysis of the Efficacy of Acupuncture and Electro -acupuncture on Post-stroke Depression]. Modern Hospital Year. 2018;1:120-124. [201798].

目的 系统评价针刺及电针治疗对中风后抑郁症(PSD)的有效性. 方法 计算机检索The Cochrane Library□PubMed□Embase□Medline□中国生物医学期刊(CBM)□维普(VIP)□中国知网(CNKI)和万方数据库, 搜集使用针刺、电针、针刺结合西药或电针结合西药治疗PSD的相关随机对照试验(RCT).由2位研究者独立进行文献筛选、资料提取, 并评价纳入研究的偏倚风险后, 采用RevMan 5.3软件进行Meta分析. 结果 最终纳入13个RCT,共1193例患者.Meta分析结果显示:在改善中风后抑郁症患者抑郁状态方面, 针刺与单纯西药治疗差异无统计学意义, 森林图提示:[MD=-0.54,95□CI(-1.46,0.39),P=0.26];电针与单纯西药治疗差异无统计学意义, 森林图提示:[MD=0.13,95□CI(-1.07,1.33),P=0.83];针刺结合西药明显优于单纯西药, 森林图提示:[MD=-3.28,95□CI(-4.45,-2.12),P<0.00001].电针结合西药与单纯西药治疗差异无统计学意义, 森林图提示:[MD=-0.39,95□CI(-8.92,2.74),P=0.3].结论 针刺及电针是一种有效的改善中风后抑郁症患者抑郁状态的治疗手段, 与口服西药等措施联用, 可显著提高疗效. 但由于纳入本研究的RCT质量及数量有限, 存在一定的偏倚风险, 本研究结论尚需更多高质量的临床试验进一步验证.	
Objective	To systematically evaluate the effectiveness of acupuncture and electroacupuncture on post-stroke depression (PSD).

Methods	Computer search The Cochrane Library, PubMed, Embase, Medline, Chinese Biomedical Journal (CBM), VIP (VIP), China Knowledge Network (CNKI) and Wanfang database, collecting randomized controlled trials (RCT) for the treatment of PSD using acupuncture, electroacupuncture, acupuncture combined with western medicine or electroacupuncture combined with western medicine. Two researchers independently conducted literature screening, data extraction, and After evaluating the risk of bias in the included study, Meta-analysis was performed using RevMan 5.3 software.
Results	The results were finally included in **13 RCTs with a total of 1193 patients**. The results of the meta-analysis showed that acupuncture and western medicine were used to improve the depression status of patients with post-stroke depression. The difference was not statistically significant. The forest map suggested: [MD=-0.54, 95% CI (-1.46, 0.39), P=0.26]; there was no significant difference between electroacupuncture and western medicine treatment. The forest map suggested: [MD= 0.13, 95% CI (-1.07, 1.33), P=0.83]; acupuncture combined with western medicine is significantly better than western medicine alone, forest map suggestion: [MD=-3.28, 95% CI (-4.45, -2.12), P< 0.00001]. There is no statistically significant difference between electroacupuncture combined with western medicine and simple western medicine. The forest map suggests: [MD=-0. 39, 95% CI (-8.92, 2.74), P = 0.3].
Conclusion	Acupuncture and electroacupuncture are effective treatments for improving depression in patients with post-stroke depression, and can be used in combination with oral western medicine. Improve the efficacy. However, due to the limited quality and quantity of RCT included in this study, there is a certain risk of bias. The conclusion of this study needs more high-quality clinical trials to further verify.

1.1.13. Zhou 2018

Zhou Xin, Ren Lu, Gao Yuanyuan, Wu Weining. [Meta Analysis of Effect of Acupuncture and Antidepressants on Depression in Patients with Post-Stroke Depression]. Chinese Archives of Traditional Chinese Medicine Year. 2018;12:2875-2879. [201757].

Objective	To evaluate the clinical therapeutic effect of acupuncture in the treatment of post-stroke depression.
Methods	We retrieved CNKI, VIP, Wanfang database, PubMed and Cochrane Library by computer. Randomize controlled trials of acupuncture for treatment of post-stroke depression collection(RCT)were collected. We evaluated the quality of the included studies according to the evaluation of Cochrane risk bias assessment tool. And then we carried out Meta-analysis using RevMan 5.3 software.
Results	A total of **19 randomized controlled trials with 1376 cases** of patients with post-stroke depression were included. The Meta-analysis results:(1) HAMD scores changes before and after treatment showed that acupuncture treatment was better than antidepressant in the control group in improving the depressive state of PSD patients and reducing the reuptake of 5-HT in serum.(2)The acupuncture therapy was not clear in improving the neurological deficit of PSD patients. The change of HAMD scale scores before and after treatment indicated that the difference between acupuncture treatment group and antidepressant drug control group was statistically significant.
Conclusion	In the clinical treatment of post-stroke depression, acupuncture treatment is better than antidepressant treatment. Acupuncture therapy is safe and effective, with less adverse reactions. However, the conclusion between the subgroups is not clear, and more high-quality randomized controlled trials are needed to further validate the efficacy.

1.1.14. Zhang 2017

Zhang Dan, Zhang Chunhong, Ma Huijing. [A Systematic Review of the Efficacy of Chinese Therapy on Preventing Post-stroke Depression]. Journal of Emergency in Traditional Chinese Medicine. 2017;04. [52334].

Objective	To systematically review the efficacy of traditional Chinese medicine therapy in the prevention of post-stroke depression (PSD).
Methods	CNKI, VIP database, Wan Fang database, Pub Med, MEDLINE were searched by the key words acupuncture, traditional Chinese medicine, prevention, brain stroke, stroke, post stroke depression in both Chinese and English by two researchers to collect higher quality randomized controlled trails (RCTS) and quasi-randomized controlled trails (CCTS) about traditional Chinese medicine therapy in the prevention of post-stroke depression. Two reviewers used Rev Man5. 3 software to do the meta-analysis after a strict screening and elimination.
Results	A total of 8 documents involving 1065 studies were studied by meta-analysis and the results showed that TCM therapy group compared with control group, could effectively prevent the happening of depression after stroke, OR=0. 38, 95%CI [0. 28, 0. 51] (P < 0. 00001).
Conclusion	The therapy of traditional Chinese medicine is effective in the prevention of post-stroke depression (PSD). But we still need more high quality studies to verify the conclusion due to small amounts of studies this time.

1.1.15. Zhang 2014 ☆☆

Zhang J, Chen J, Chen J, Li X, Lai X, Zhang S, Wang S. Early filiform needle acupuncture for poststroke depression: a meta-analysis of 17 randomized controlled clinical trials. Neural Regen Res. 2014; 9(7):773-84. [165595].

Objectives	To evaluate the effectiveness and safety of filiform needle acupuncture for poststroke depression, and to compare acupuncture with the therapeutic efficacy of antidepressant drugs.
Methods	We retrieved data from the Chinese National Knowledge Infrastructure (1979-2012), Wanfang (1980-2012), VIP (1989-2012), Chinese Biomedical Literature (1975-2012), PubMed (1966-2012), Ovid Lww (-2012), and Cochrane Library (-2012) Database using the internet. SELECTION CRITERIA: Randomized controlled trials on filiform needle acupuncture versus antidepressant drugs for treatment of poststroke depression were included. Moreover, the included articles scored at least 4 points on the Jadad scale. EXCLUSION CRITERIA: other acupuncture therapies as treatment group, not stroke-induced depression patients, score < 4 points, non-randomized controlled trials, or animal trials. MAIN OUTCOME MEASURES: These were the Hamilton Depression Scale scores, clinical effective rate, Self-Rating Depression Scale scores, Side Effect Rating Scale scores, and incidence of adverse reaction and events.
Results	**A total of 17 randomized controlled clinical trials were included**. Meta-analysis results displayed that after 4 weeks of treatment, clinical effective rate was better in patients treated with filiform needle acupuncture than those treated with simple antidepressant drugs [relative risk = 1.11, 95% confidence interval (CI): 1.03-1.21, P = 0.01]. At 6 weeks, clinical effective rate was similar between filiform needle acupuncture and antidepressant drug groups. At 2 weeks after filiform needle acupuncture, Hamilton Depression Scale (17 items) scores were lower than in the antidepressant drug group (mean difference = -2.34, 95%CI: -3.46 to -1.22, P < 0.000,1). At 4 weeks, Hamilton Depression Scale (24 items) scores were similar between filiform needle acupuncture and antidepressant drug groups. Self-Rating Depression Scale scores were lower in filiform needle acupuncture group than in the antidepressant drug group. Side Effect Rating Scale was used in only two articles, and no meta-analysis was conducted. Safety evaluation of the 17 articles showed that gastrointestinal tract reactions such as nausea and vomiting were very common in the antidepressant drug group. Incidence of adverse reaction and events was very low in the filiform needle acupuncture group.

Conclusions	Early filiform needle acupuncture for poststroke depression can perfectly control depression. Filiform needle acupuncture is safe and reliable. **Therapeutic effects of filiform needle acupuncture were better than those of antidepressant drugs**.

1.1.16. Zhang 2014 ☆

Zhang Wei, Sun Jian-Hua, Gao Yang, Pei Li-Xia, Wu Xiao-Liang, Chen Lu et al. System review on treating post-stroke depression with acupuncture. World Journal of Acupuncture- Moxibustion 2014.24(2):52. [176422].

Objective	To assess the efficacy and safety of treating post-stroke depression with acupuncture compared to western medicine systematically.
Methods	Databases were retrieved such as Cochrane Library, PubMed, Web of Sicence, Embase, CBM, CNKI and WanFang Data so as to look up randomized controlled trials (RCT) of treating post-stroke depression with acupuncture and western medicine, and the time limit for the retrieval spanned from the date of database established to September 2013. By extracting data and evaluating methodological quality of included studies according to inclusion and exclusion criteria, RevMan 5.2 software was applied for Meta-analysis and evidence quality was assessed by adopting the GRADE system.
Results	**A total of 13 RCTs (845 patients** with post-stroke depression) were included in this study. It was revealed by Meta-analysis that the differences of the two groups were statistically significant in terms of HAMD scale scores measured at the end of the treatment by comparing the treatment of acupuncture and western medicine [SMD=0.26, 95% CI (0.11, 0.40)], but via susceptibility analysis (excluding low quality studies), the differences were not statistically significant [SMD=-0.06, 95% CI (-0.37, 0.25)], and the reliability of the results was low; in terms of adverse events, the differences were statistically significant [RR=0.32, 95% CI (0.19, 0.53)], and the risk of adverse events reduced by 68% in the acupuncture group. From the assessment on evidence quality grade based on GRADE system, it was revealed that HAMD scores and adverse events were evidences with fairly low quality.
Conclusion	Although this system assessment showed that **treating post-stroke depression with acupuncture was more effective compared with western medicine**, the result was less reliable and quality of evidences was poor. The above-mentioned results need more highquality randomized controlled trials for further verification.

1.1.17. Zhang 2012

Zhang GC, Fu WB, Xu NG, Liu JH, Zhu XP, Liang ZH, Huang YF, Chen YF. Meta analysis of the curative effect of acupuncture on post-stroke depression. J Tradit Chin Med. 2012;32(1):6-11. [164843].

Objectives	To systematically evaluate the curative effect of acupuncture on post-stroke depression (PSD).
Methods	The internet was used to retrieve the Wanfang Medical Data System, Chinese Periodical Net, the Weipu Information Resources System, PubMed and the Cochrane Library Database. Relevant articles, up to September 2010, were manually retrieved. These papers included studies that had performed random and semi-random control trials for the use of acupuncture to treat PSD. **Fifteen random control tests involving 1096 patients were included** in this study and individual cases, interventional measures and curative effects were extracted from this research. Grade methodological quality evaluation and meta-analysis were performed on these studies.

Results	Comparison between the acupuncture group and the Western medicine group for the curative rate on PSD revealed an OR of 1.48, 95% CI = [1.11 1.97] and P = 0.008. Comparison of obviously effective rate shows that OR = 1.39, 95% CI = [1.08 1.80] and P = 0.01. Comparison of effective rate shows that OR = 0.83, 95% CI = [0.631.09] and P = 0.18.
Conclusions	Comparison between the acupuncture group and Western medicine group in treating PSD revealed that there is a statistical difference in curative rate and remarkably effective rate, but no difference in effective rate.

1.1.18. Zhang 2010 ☆☆

Zhang ZJ, Chen HY, Yip KC, Ng R, Wong VT. The effectiveness and safety of acupuncture therapy in depressive disorders: systematic review and meta-analysis, J Affect Disord. 2009. 124(1-2):9-21. [136615].

Background	Although acupuncture has been used as an alternative treatment for depressive disorders, its effectiveness and safety are not well defined. The purpose of this systematic review with meta-analysis was to evaluate the effectiveness of acupuncture as monotherapy and as an additional therapy in treating various depressive conditions, particularly major depressive disorder (MDD) and post-stroke depression (PSD).
Methods	Following systematic review, meta-analysis was conducted on high-quality randomized controlled trials (RCTs).
Results	Of 207 clinical studies of acupuncture for various depression retrieved, 113 (54.6%) were on MDD and 76 (36.7%) on PSD. Twenty RCTs of MDD (n=1998) and **15 of PSD (n=1680)** identified for high-quality protocol (Jadad score >/=3) were included for meta-analysis. The efficacy of acupuncture as monotherapy was comparable to antidepressants alone in improving clinical response and alleviating symptom severity of MDD, but not different from sham acupuncture. No sufficient evidence favored the expectation that acupuncture combined with antidepressants could yield better outcomes than antidepressants alone in treating MDD. Acupuncture was superior to antidepressants and waitlist controls in improving both response and symptom severity of PSD. The incidence of adverse events in acupuncture intervention was significantly lower than antidepressants.
Conclusions	**Acupuncture therapy is safe and effective in treating MDD and PSD, and could be considered an alternative option for the two disorders**. The efficacy in other forms of depression remains to be further determined.

1.1.19. Zhang 2009 ☆

Zhang JB, Ren L, Sun Y. [Meta-analysis on acupuncture for treatment of depression in patients of poststroke]. Chinese Acupuncture and Moxibustion. 2009. 29(7):599-602. [154691].

Objective	To assess therapeutic effect and the safety of acupuncture for treatment of the depression in patients of poststroke.
Methods	The clinical research documents in recent 10 years of acupuncture for treatment of depression in patients of poststroke were retrieved, the homogeneity test was used and the effect amount was complicated in the clinical randomized controlled trials (RCT) documents which had been adopted in the Meta-analysis, and furthermore the Meta-analysis was used in the Hamilton Depression Scale (HAMD) score of both acupuncture group and medication group after treatment.

Results	**Seventeen RCT** heterogeneity test results which were adopted in the study indicated that chi2 = 21.98, P = 0.14, proved that they had homogeneity, and fixed effect model was adopted to analyse, after combination, OR = 2.54, 95% confidence interval was (1.91, 3.38), according to Z test, Z = 6.41, P < 0.00001, the diamond was in the right side of the vertical line, indicated that there was a significant difference in the therapeutic effect between the acupuncture group and the medication group. The evaluation of the influence of acupuncture on HAMD indicated that there was a significant difference between the acupuncture group and the medication group.
Conclusion	The therapeutic effect of acupuncture for **treatment of the depression in patients of poststroke is superior to other common medicine with safety**, but it still needs more large sample RCTs to verify.

1.2. Special Acupuncture Techniques

1.2.1. Electro-acupuncture

1.2.1.1. Liang 2026

Front Neurol. 2026 Jan 12;16:1732787. Efficacy and safety of electroacupuncture for post-stroke depression: a systematic review and meta-analysis. Liang Y, Gu Y, Han H, Yin H, Gao J, Hou L, Ning W, Zheng Z. https://doi.org/10.3389/fneur.2025.1732787

Background	Depression is a common comorbid condition in stroke patients, significantly impairing their quality of life. Electroacupuncture (EA) has shown promising effects in treating post-stroke depression (PSD), but integrated evidence remains scarce.
Objective	To investigate the efficacy of EA in improving PSD and evaluate its clinical effectiveness and safety through systematic review and meta-analysis.
Methods	We searched eight electronic databases (PubMed, Cochrane Library, Embase, Web of Science, CNKI, VIP Data Platform, Wanfang Data Knowledge Service Platform, and China Biomedical Literature Service System) and manually reviewed reference lists of relevant literature and clinical trial registries for randomized controlled trials (RCTs) of EA for PSD. Eligible studies were screened based on inclusion and exclusion criteria, and relevant data were extracted. Meta-analysis was performed using RevMan 5.4 software.
Results	A total of **22 studies involving 1,640 patients** were included. Meta-analysis results showed that EA improved HAMD (MD = -1.71, 95% CI: -2.79 to -0.63, I2 = 89%, p = 0.002), efficacy rate (OR = 1.94, 95% CI: 1.43 to 2.64, I2 = 0%, p < 0.0001), and safety (OR = 0.2, 95% CI: 0.12–0.34, I2 = 45%, p < 0.00001). However, it did not show superiority over the control group for the Barthel Index (BI) (MD = 4.01, 95% CI: -0.26 to 8.27, I2 = 70%, p = 0.07) or SDS (MD = -3.28, 95% CI: -6.78 to 0.21, I2 = 97%, p = 0.07). GRADE assessment indicated very low evidence for HAMD and low evidence for BI.
Conclusion	EA demonstrated superiority over conventional drug therapy in improving HAMD scores, efficacy rates, and safety. No significant difference was observed between EA and control interventions for BI and SDS. High heterogeneity was present for HAMD and SDS, and all included studies were conducted in China, suggesting potential regional bias. Further rigorous clinical research is required to provide high-quality evidence.

1.2.1.2. Hu 2025

Hu X, Pan Y, Tang Y, Zhang Y, Liu Z, Zhuo Y, Zhang H, Yi X. Efficacy and safety of electroacupuncture-

based comprehensive treatment for post-stroke depression: a systematic review and meta-analysis of randomized controlled trials. Front Psychiatry. 2025 Aug 15;16:1610032. https://doi.org/10.3389/fpsyt.2025.1610032

Objective	This research aims to assess the therapeutic effects and safety of treatments for PSD by conducting a thorough systematic review and meta-analysis.
Methods	Randomized controlled trials (RCTs) were retrieved from PubMed, Embase, Web of Science, The Cochrane Library, China National Knowledge Infrastructure (CNKI), and Wan Fang, covering all available records up to September 30, 2024. RCTs evaluating on the efficacy and safety of electroacupuncture in individuals with PSD were included. The robustness of the findings and possible contributors to heterogeneity were examined via sensitivity and subgroup analyses. Statistical analyses were conducted utilizing STATA 15.0 and Review Manager 5.4.
Results	This study included **65 RCTs with a total of 5,362 participants**. The results showed that electroacupuncture exhibited significantly greater clinical effectiveness compared to the control group (RR = 1.16, 95% CI [1.11, 1.22], I^2 = 59%, p < 0.00001), effectively reducing HAMD scores (SMD = -0.56, 95% CI [-0.72, -0.40], I^2 = 87%, p < 0.00001), SDS scores (SMD = -0.56, 95% CI [-0.87, -0.24], I^2 = 90%, p = 0.006), and TCM-DS scores (SMD = -0.52, 95% CI [-0.78, -0.27], I^2 = 0%, p < 0.0001). The incidence of adverse reactions was lower in the electroacupuncture (EA) intervention group (RR = 0.54, 95% CI [0.35, 0.83], I^2 = 0%, p = 0.004).The most commonly used acupoints were primarily located along the Gallbladder, Bladder, and Du Meridian, with the five most frequently used acupoints being: Baihui (GV20, 41 times), Shenting (DU24, 28 times), Taichong (LV3, 28 times), Shenmen (HT7, 26 times), and Neiguan (PC6, 22 times).
Conclusion	Electroacupuncture could serve as a safe and effective complementary therapy for PSD. It is recommended that multicenter, large-scale, and high-quality RCTs be conducted to further validate these findings.

1.2.1.3. Zhang 2025

Zhang Z, Xue K, Li H, Yan M, Cui J. Electroacupuncture for post-stroke depression: a systematic review and meta-analysis of randomized controlled trials. Front Neurol. 2025 Oct 17;16:1671808. https://doi.org/10.3389/fneur.2025.1671808

Background	Electroacupuncture (EA), a non-pharmacological therapy within Traditional Chinese Medicine, has been increasingly investigated for depressive disorders. This meta-analysis evaluated the efficacy of EA in treating post-stroke depression (PSD).
Methods	Seven electronic databases were searched up to May 31, 2025, for randomized controlled trials of EA for PSD. Two reviewers independently screened, extracted data, and assessed risk of bias. Meta-analyses were conducted using RevMan 5.4 and Stata/MP 17.0.
Results	**Eleven RCTs involving 853 participants** were included. EA significantly reduced Hamilton Depression Rating Scale scores (MD = –3.68; 95% CI –5.78 to –1.59; p = 0.0006), Self-Rating Depression Scale scores (MD = –3.08; 95% CI –5.94 to –0.21; p < 0.0001), and NIH Stroke Scale scores (MD = –1.85; 95% CI –2.93 to –0.77; p = 0.0008). Subgroup analysis showed higher effective rates versus simple acupuncture (RR = 1.38; 95% CI 1.21–1.59), improved regional cerebral blood flow (MD = 24.21; 95% CI 13.64–34.78), and increased plasma 5-HT levels (MD = 16.83; 95% CI 12.75–20.91). EA also improved stroke scores, WHOQOL-BREF, and ADL scores.
Conclusion	EA appears beneficial for managing PSD, improving depressive symptoms, neurological function, and quality of life. However, the evidence certainty remains limited due to methodological weaknesses of included trials.

1.2.1.4. Wang 2021

Wang X, Cai W, Wang Y, Huang S, Zhang Q, Wang F. Is Electroacupuncture an Effective and Safe Treatment for Poststroke Depression? An Updated Systematic Review and Meta-Analysis. Biomed Res Int. 2021. [222765]. https://doi.org/10.1155/2021/8661162

Objective	To observe and compare the efficacy and safety of electroacupuncture and antidepressants in the treatment of poststroke depression (PSD) using a meta-analysis method.
Methods	The VIP, CNKI, Wanfang, CMB, Embase, PubMed, and Cochrane databases were searched. All randomized controlled trials (RCT) on electroacupuncture treatment of PSD were searched and further screened. Meta-analysis was performed on electroacupuncture and western medicine for PSD to explore the difference in efficacy between electroacupuncture and western medicine for PSD.
Results	Nineteen RCTs were included in the meta-analysis. Compared with the Western medicine group, the meta-analysis showed no significant changes in Hamilton Depression Scale (HAMD) scores between the electroacupuncture group and the antidepressant group ($P > 0.05$). The number of adverse events in the electroacupuncture group was less than that in the antidepressant group.
Conclusion	Compared with antidepressants, electroacupuncture is not less effective in improving depression symptoms in PSD patients with greater safety.

1.2.1.5. Li 2018

Li XB , Wang J , Xu AD , Huang JM , Meng LQ , Huang RY , Xu J. Clinical effects and safety of electroacupuncture for the treatment of post-stroke depression: a systematic review and meta-analysis of randomised controlled trials. Acupuncture in Medicine. 2018;36(5):284-293. [200331].

Objective	The aim of this systematic review was to assess the efficacy/effectiveness and safety of electroacupuncture (EA) in the treatment of post-stroke depression (PSD).
Methods	A comprehensive literature search in the Pubmed, Embase, CENTRAL, ISI Web of Science, CNKI and Wanfang databases was conducted, and all relevant randomised controlled trials (RCTs) were screened for eligibility by two independent reviewers. The Cochrane Collaboration's tool and Jadad score were used to assess the risk of bias of included studies, and only RCTs scoring ≥3 were included in a meta-analysis.
Results	18 RCTs involving a total of 813 participants (mean age 61.6 years) in the EA groups and 723 participants (mean age 61.9 years) in the control groups were included. The included studies had an average 3-point Jadad score. PSD was diagnosed according to the Chinese Classification of Cerebrovascular Disease (CCCD) and the Chinese Classification of Mental Disease (CCMD) criteria. There was no significant difference between EA and antidepressants (fluoxetine 10-40 mg/day, citalopram 20 mg/day, sertraline 50 mg/day) in terms of the Hamilton Depression Rating Scale (HAMD) scores at week 4 after treatment (standardised mean difference (SMD) -0.11, 95% CI -0.31 to 0.10), at week 6 after treatment (SMD 0.04, 95% CI -0.43 to 0.51) or at week 8 after treatment (SMD -0.01, 95% CI -0.23 to 0.22). However, the combined incidence of adverse events in the EA groups was significantly lower than in the antidepressant groups (RR 0.21, 95% CI 0.14 to 0.33).
Conclusion	There was no significant difference between EA and antidepressants in the severity of depression, however EA caused fewer adverse events than antidepressants. Additional larger scale RCTs with rigorous study design are required.

1.2.2. Moxibustion

1.2.2.1. Chen 2025

Chen J, Shao G. Efficacy of moxibustion for poststroke depression: A meta-analysis. Medicine (Baltimore). 2025 Nov 21;104(47):e45904. https://doi.org/10.1097/MD.0000000000045904

Background	Poststroke depression (PSD) is a frequent neuropsychiatric complication that adversely affects recovery and quality of life in stroke survivors. Moxibustion, a traditional Chinese therapy, has been increasingly explored as an adjunctive treatment for PSD, but its clinical efficacy remains uncertain. This meta-analysis aimed to evaluate the impact of moxibustion on depressive symptoms and clinical outcomes in patients with PSD.
Methods	A comprehensive search of 7 electronic databases, including PubMed, Embase, Web of Science, the Cochrane Library, China National Knowledge Infrastructure, WanFang Data, and SinoMed, was performed from inception to July 25, 2025, without language restrictions. **Twelve randomized controlled trials (RCTs) comprising 819 participants** met the inclusion criteria.
Results	Pooled analysis showed that moxibustion significantly reduced Hamilton Depression Rating Scale (HAMD) scores compared with control interventions (standardized mean difference = -1.20; 95% confidence interval [CI]: -1.65 to -0.76), indicating a clinically meaningful improvement in depressive symptoms. Eight RCTs reported clinical effective rates, and the combined results demonstrated a significant advantage for moxibustion (risk ratio = 1.15; 95% CI: 1.07-1.24). Sensitivity analysis confirmed the robustness of the findings, and no significant publication bias was detected.
Conclusion	These results suggest that moxibustion is an effective and well-tolerated complementary therapy for PSD, potentially enhancing the outcomes of conventional treatment. Further large, high-quality multicenter trials are needed to validate these findings and establish standardized treatment protocols.

1.2.2.2. Guo 2022

Guo SQ, Zhao GZ, Li ST, Yao Q, Han L, Li B, Wang H, Liu YJ, Zhao BX. Moxibustion for treating patients with post-stroke depression: a systematic review and meta-analysis. Ann Palliat Med. 2022 Jan;11(1):85-97. https://doi.org/10.21037/apm-21-3421

Background	To assess the effectiveness and safety of moxibustion for post-stroke depression (PSD).
Methods	A search was conducted in the following English and Chinese databases: Medline, Embase, Cochrane Central Register of Controlled Trials (CENTRAL), China National Knowledge Infrastructure (CNKI), Chinese Biomedical Literature (CBM), VIP and Wanfang. The outcomes included Hamilton Depression Rating Scale (HAMD), effective rate, and Modified Edinburgh-Scandinavian Stroke Scale (MESSS) scale. The formulation of search strategy, data extraction, and quality evaluation of involved studies was performed according to Cochrane handbook guidelines. The software RevMan 5.4 and Stata 16 were used for data analysis. The evidence quality of each outcome was evaluated by GRADEpro guideline development tool (GDT).

Results	A total of **14 trials with 863 participants** were included. A certain risk of bias of unclear or high was detected in the included studies. Compared with the control group, adding moxibustion could change the value of HAMD [standardized mean difference (SMD) =-1.17; 95% confidence interval (CI): -1.55 to -0.79; I2=85.5%; P<0.01] and the effective rate [risk ratio (RR) =1.22; 95% CI: 1.13 to 1.32; I2=0.0%; P=0.56], and the differences in the MESSS scale (SMD =-0.72; 95% CI: -1.06 to -0.38; I2=0.0%; P=0.80) had statistical differences. The certainty was low in effective rate, and very low in HAMD and MESSS. Besides, moxibustion was shown to be generally safe.
Discussion	This review found that moxibustion may be an effective intervention for PSD. However, the results of this study have a certain limitation. The benefits of moxibustion for PSD need to be confirmed in the future by more high-quality randomized controlled trials (RCTs).

1.2.2.3. Lu 2013 ☆

Lu Xiao-Lin, Sun Zhong-Ren, Zhang Qin-Hong, Du Wei. [Systematic review of clinical moxibustion treatment for post-stroke depression]. Shanghai Journal of Acupuncture and Moxibustion 2013.32(11):954. [178908]

Objective	To evaluate the clinical efficacy of moxibustion in treating post-stroke depression.
Methods	Searches of CNKI, Wanfang, VIP and PubMed databases retrieved 157 pieces of literature. Finally, 5 pieces of literature met the inclusion criteria and were qualitatively assessed using CLEAR NPT.
Results	Analysis of 5 included pieces of literature showed that **moxibustion therapy had a definite effect on post-stroke depression** with higher safety margin.

1.2.3. Abdominal Acupuncture

1.2.3.1. Su 2021

Su IJ, Liao L, Huang F. A Meta-Analysis of the Effect of Abdominal Acupuncture on Post-Stroke Depression. Medical Acupuncture. 2021;33(4):269-277. [221442]. https://doi.org/10.1089/acu.2021.0001

Objective	China has the highest stroke incidence in the world, with a large percentage of post-stroke depression (PSD). Abdominal acupuncture is used frequently to treat PSD. This research systematically evaluated the clinical efficacy of this treatment for PSD.
Methods	A literature search retrieved randomized controlled trials in English and Chinese on abdominal acupuncture in conjunction with other therapies (experimental groups), compared to conventional therapies (control groups) for treating PSD from January 2000 to November 2020. Literature quality was evaluated with the Cochrane Library bias-risk assessment tool. RevMan5.3 software was used for the meta-analysis.
Results	A total of **10 RCTs involving 708 patients** were evaluated. Hamilton Depression Scale scores of the experimental groups were significantly lower than in the control groups (mean difference [MD] = -2.34; 95% confidence interval [CI]: -2.89, -1.78; P < 0.00001). Total effective rates of the experimental groups were significantly higher than in the control groups (odds ratio = 3.90; 95% CI: 2.29, 6.62, P < 0.00001). Barthel index scores in the experimental groups were significantly higher than in the control groups (MD = -11.39; 95% CI: 9.07, 13.72; P < 0.00001). There were no significant differences in National Institutes of Health Stroke Scale (NIHSS) scores between the 2 groups (MD = -0.03; 95% CI: -0.68, 0.62; P = 0.93).

Conclusions	Abdominal acupuncture for treating PSD is generally effective. However, the degree of neurologic improvement needs further investigation.

1.2.4. Ocular Acupuncture

1.2.4.1. Yang 2019

Yang Wei, Wang Pengqin. [Systematic Review and Meta-Analysis of the Clinical Efficacy of Eye Acupuncture in the Treatment of Poststroke Depression]. Journal of Practical Traditional Chinese Internal Medicine. 2019;4:1-5+77. [201713].

Background	ocular acupuncture is effective in treating apoplexy sequelae.
Objective	To systematically evaluate the clinical study of eye acupuncture in the treatment of post-stroke depression, and to explore the effectiveness of eye acupuncture in the treatment of post-stroke depression.
Methods	[Retrieval strategies] The databases of CNKI, Wanfang, VIP, CBM, PubMed and Cochrane library were comprehensively searched. The retrieval time is from the establishment of the database to December 2018. [Inclusion criteria]research design :① a randomized controlled trial(RCT)of eye acupuncture for the treatment of poststroke depression. ② object of observation: poststroke depression was clearly diagnosed, meeting the criteria for the diagnosis and evaluation of therapeutic effect of stroke or the diagnostic essentials of various cerebrovascular diseases and the diagnostic criteria for depression syndrome in 1995. ③ intervention measures: the treatment group used eye acupuncture therapy or eye acupuncture with other therapies, the control group used noneye acupuncture therapy.④ outcome index: effective rate, HAMD, SDS, ADL, SSS, TCM syndrome effect evaluation scale. [Data collection and analysis] The retrieved literatures were imported into NoteExpress software for preliminary screening, and then two researchers independently screened and identified the literatures according to the admission criteria. In case of any disagreement, a third party was invited to arbitrate. Data extraction table was used, and the extraction contents included: baseline condition, intervention measures, effective rate, Hamilton depression scale(HAMD), self-rating depression scale(SDS), etc...
Main results	A total of 59 references were obtained through screening, 31 duplicates were deleted, reading excerpts and original texts were deleted, 1 animal experiment, 8 research progress articles, 8 non-post-stroke depression related diseases articles, 2 clinical studies that did not meet the exclusion criteria were excluded, and 9 articles were finally included. Meta analysis results showed that the total effective rate RR=1.22 [1.12,1.33], P=0.68>0.05. HAMD MD=3.22 [3.04, 3.39]; SDS score MD=3.73 [3.63, 3.83].
Questions and prospects	Eye acupuncture combined with medicine or body acupuncture is superior to non-eye acupuncture in the treatment of post-stroke depression. However, the total sample size is relatively small, and the evidence for efficacy is insufficient. The quality of included literature methodological studies is not high, and more high-quality clinical studies are expected to improve the evidence intensity.

1.2.5. Scalp Acupuncture

1.2.5.1. Jiang 2023

Jiang W, Jiang X, Yu T, Gao Y, Sun Y. Efficacy and safety of scalp acupuncture for poststroke

depression: A meta-analysis and systematic review. Medicine (Baltimore). 2023 Aug 4;102(31):e34561. https://doi.org/10.1097/MD.0000000000034561

Background	Poststroke depression (PSD) is a common clinical poststroke complication that adversely affects cognitive and physical function rehabilitation. Scalp acupuncture (SA) can significantly improve somatic dysfunction and emotional disorder in stroke patients. This meta-analysis aims to evaluate the effectiveness and safety of SA in the treatment of PSD.
Methods	We conducted a comprehensive search of multiple electronic databases, including PubMed, Cochrane Library, Embase, Web of Science, China National Knowledge Internet, China Science and Technology Journal Database, Wan Fang Data Knowledge Service Platform, and China Biology Medicine databases until December 20, 2022, to identify randomized controlled trials investigating the efficacy of SA in the treatment of PSD. Two independent researchers screened the literature, extracted data, and assessed the risk of bias in the included studies based on the inclusion and exclusion criteria. We performed a meta-analysis of the eligible literature using RevMan 5.4.1 and Stata 15.0 software.
Results	This study comprised a total of **14 randomized controlled trials**, 10 of which used SA and 4 of which used SA in combination with electroacupuncture therapy. The results of the meta-analysis revealed that the effective rate of the SA group was significantly higher than that of the Western medicine group (relative risk = 1.09, 95% confidence interval (CI) [1.02, 1.16], P = .008). Moreover, compared to the Western medicine group, the SA group demonstrated significant improvements in Hamilton depression scale scores (mean difference = -2.29, 95% CI [-3.88, -0.70], P = .005) and neurological function deficit scores (mean difference = -3.06, 95% CI [-5.91, -0.21], P = .04). Additionally, the SA group has a lower incidence of adverse events than the western medicine group (relative risk = 0.12, 95% CI [0.05, 0.29], P < .00001).
Conclusion	SA has superior efficacy and safety compared to Western medicine for PSD. These findings suggest that SA could be a promising alternative treatment for the assessed condition. Due to the limited number and quality of the included literature, the above conclusions must be confirmed by additional high-quality research.

1.2.5.2. Zhong 2023

Zhong D, Cheng H, Pan Z, Ou X, Liu P, Kong X, Liu D, Chen J, Li J. Efficacy of scalp acupuncture combined with conventional therapy in the intervention of post-stroke depression: A systematic review and meta-analysis. Complement Ther Med. 2023 Oct;77:102975. https://doi.org/10.1016/j.ctim.2023.102975

Background	Post-stroke depression (PSD) is a common complication following a stroke, significantly impacting patients' quality of life and mental well-being. Currently, two primary approaches are employed to treat PSD: drug therapy and non-drug therapy. Among these, acupuncture, specifically scalp acupuncture (SA), has gained attention due to its cost-effectiveness and broad social benefits. SA is a precise and direct form of acupuncture that has been utilized in the treatment of PSD. Although several randomized controlled trials (RCTs) have demonstrated the efficacy of SA in treating PSD, there is a lack of comprehensive systematic reviews. Given the limitations of existing evidence, we conducted a systematic evaluation to assess the effectiveness of SA in combination with conventional therapy (CT) for intervening in PSD.

Methods	We systematically searched five databases for articles published up until May 31, 2023, pertaining to SA treatment of PSD. A team of researchers meticulously screened and assessed these articles to identify the final included studies. After extracting relevant information and outcome indicators from the selected articles, we employed RevMan5.3 software to evaluate their quality and perform statistical analysis. Throughout our research, we strictly adhered to the PRISMA 2020 guidelines.
Results	A total of **11 articles** were included, and a meta-analysis was conducted to evaluate the effectiveness of SA combined with CT for treating PSD. The results revealed that SA combined with CT can effectively improve the treatment's success rate for PSD and reduce the severity of depressive symptoms measured by the Self-Rating Depression Scale. However, SA combined with CT did not show significant reductions in depressive symptoms assessed by the Hamilton Rating Scale for Depression, which may be related to the inclusion of high heterogeneity articles. Importantly, the combination treatment did not lead to an increase in adverse reactions among PSD patients.
Conclusion	While the effectiveness of SA combined with CT in treating PSD still requires further validation through rigorous randomized double-blind trials, this study provides a comprehensive collection of studies that meet the criteria for SA combined with CT in PSD treatment. It objectively and systematically evaluated the impact of SA combined with CT on PSD. Consequently, the findings of this study hold certain clinical significance.

1.2.6. Comparison of acupuncture techniques

1.2.6.1. Hang 2021

Hang X, Li J, Zhang Y, Li Z, Zhang Y, Ye X, Tang Q, Sun W. Efficacy of frequently-used acupuncture methods for specific parts and conventional pharmaceutical interventions in treating post-stroke depression patients: A network meta-analysis. Complement Ther Clin Pract. 2021 Nov;45:101471. https://doi.org/10.1016/j.ctcp.2021.101471.

2. Overviews of Systematic Reviews

2.1. Liu 2025

Liu X, Zhu F, Zhang JL, He ZX, Yin S, Wu RH, He YY, Zeng F. Effectiveness and Safety of Acupuncture as an Adjunctive Therapy for Post-Stroke Depression: An Overview of Systematic Reviews. Neuropsychiatr Dis Treat. 2025 Aug 1;21:1569–1588. https://doi.org/10.2147/NDT.S526413

Background	Post-stroke depression (PSD) is a common and serious neuropsychiatric complication that requires effective treatment options. Acupuncture as an adjuvant therapy shows promise, though current systematic reviews exhibit significant discrepancies in effectiveness and safety evidence, with insufficient methodological rigor. The objective was to evaluate systematic reviews assessing acupuncture as an adjuvant therapy for PSD.

Methods	Eight databases were searched from inception to March 2024 using terms such as “acupuncture and moxibustion therapy”, “post-stroke depression”, and “systematic evaluation”. All systematic reviews underwent methodological evaluation with four tools: AMSTAR 2 for methodological quality, ROBIS for risk of bias, PRISMA 2020 for reporting standards, and GRADE for evidence grading. Inter-reviewer consistency was measured using the k-index.
Results	**Ten systematic reviews** were included. According to AMSTAR 2, 9 of 10 (90%) were rated as “very low” confidence. Based on ROBIS, only 3 reviews (30%) had a low risk of bias. Reporting quality met PRISMA 2020 standards overall, but evidence grading was insufficient in most cases (only 2/10 adequately assessed). Using GRADE, 58.8% (20/34 outcomes) were rated “very low”. Acupuncture as an adjunctive therapy combined with conventional treatments significantly improved HAMD and NIHSS scores compared with monotherapy.
Conclusion	Acupuncture as an adjunctive therapy appears to improve depressive symptoms and functional outcomes in PSD, but the generally low methodological quality and inconsistent evidence limit the reliability of these conclusions. Further high-quality, rigorously designed systematic reviews and trials are needed.

2.2. Meng 2025

Meng L, Xu CL, He XX, Tan XC. Acupuncture and Moxibustion for Poststroke Depression: Systematic Review. Interact J Med Res. 2025 Oct 16;14:e76577. https://doi.org/10.2196/76577

Background	Poststroke depression (PSD) is a common complication following stroke. In recent years, several systematic reviews have evaluated the effects of moxibustion and acupuncture on PSD; however, their findings have been inconsistent.
Objective	To assess the methodological quality, reporting quality, and strength of evidence of existing systematic reviews on acupuncture and moxibustion for PSD, and to analyze their limitations to guide future research.
Methods	Systematic reviews and meta-analyses of randomized controlled trials comparing moxibustion and acupuncture for the treatment of PSD were searched in eight databases (PubMed, Embase, Cochrane Library, Web of Science, CNKI, Wanfang, VIP, and CBM) up to August 10, 2024. Methodological, reporting, and evidence quality were assessed using AMSTAR 2, PRISMA 2020, and GRADE, respectively. Overlap among primary studies was measured using the corrected covered area.
Results	Twenty-four reviews were included. All were rated as having low or critically low methodological quality (AMSTAR 2). Reporting quality was inadequate or partially inadequate in 22 of 24 studies (PRISMA 2020). The quality of evidence ranged from very low to moderate (GRADE). Most primary outcomes showed mild to moderate overlap among studies.
Conclusion	Acupuncture may be beneficial for PSD, but the methodological and reporting quality of current reviews remains poor. Future evidence should come from large, multicenter, rigorously designed RCTs and high-quality systematic reviews.

2.3. Miao 2025

Miao RQ, Zhu FY, Wang TY, Yin S, Shuai C, Li T, Li Z, Luo L, Yang B. The effectiveness and safety of acupuncture for post-stroke depression: an overview of systematic reviews. Complement Ther Med. 2025 Apr 19:103178. https://doi.org/10.1016/j.ctim.2025.103178.

Backgound	In recent years, research on acupuncture for post-stroke depression (PSD) has grown significantly, yet findings remain inconsistent. Few researchers have conducted comprehensive assessments of systematic reviews (SRs) in this area. Consequently, there is a need for a thorough and objective synthesis of clinical evidence regarding acupuncture's effectiveness in treating PSD.
Objective	To evaluate and synthesize evidence on the efficacy and safety of acupuncture for PSD through systematic reviews, offering valuable insights for clinical practice and guiding future research directions.
Methods	We searched PubMed, Embase, Web of Science, Cochrane Library, CNKI, SinoMed, Wanfang, VIP and Google Scholar databases for relevant literature. The search covered publications from database inception to September 10, 2024. Literature selection and data extraction were independently performed by two reviewers. The methodological quality, bias risk, and evidence level of included SRs were assessed using AMSTAR 2, ROBIS, and GRADE tools. The corrected covered area (CCA) was calculated to assess overlap in original studies. Data from included SRs were subjected to quantitative or descriptive analysis.
Results	A total of **38 SRs** on acupuncture for PSD were included. After assessment using AMSTAR 2, one SR was rated as moderate quality, two as low quality, and 35 as very low quality. According to ROBIS, 21 SRs were classified as high risk of overall bias, and 17 as low risk. Acupuncture showed potential to improve depressive symptoms, stroke-related symptoms, and activities of daily living in PSD patients, though the quality of evidence is limited. Some studies suggested possible effects on cognitive function, biomarkers, sleep quality, and Traditional Chinese Medicine syndromes, but these findings require further validation with higher-quality research. While no serious adverse effects were reported in the reviewed studies, more rigorous safety evaluations are needed before definitive conclusions about acupuncture's safety for PSD can be made.
Conclusion	Acupuncture shows potential as a treatment for PSD, though more high-quality research is needed to establish its effectiveness and safety. Currently, the majority of systematic reviews exhibit deficiencies in protocol pre-registration, documentation of excluded studies, and disclosure of funding sources, resulting in systematic reviews of suboptimal quality. Current evidence suggests possible benefits for depressive symptoms, stroke-related symptoms, activities of daily living, cognitive function, biomarkers, sleep quality, and TCM syndromes, but these findings should be interpreted cautiously given the limitations in study quality. Further high-quality studies are needed to confirm the efficacy and safety of acupuncture for PSD.

2.4. Xie 2022

Xie J, Geng X, Fan F, Fu X, He S, Li T. The efficacy of therapies for post-stroke depression in aging: An umbrella review. Front Aging Neurosci. 2022 Aug 23;14:993250. https://doi.org/10.3389/fnagi.2022.993250.

Objective	Post-stroke depression (PSD) is a common complication after stroke. PSD is associated with emotional disorders and psychological dependence, which are potential risk factors for stroke recurrence and suicidality. This study aimed to perform an umbrella review of therapies for PSD through a comprehensive literature search.
Methods	A systematic search was conducted in the PubMed and Web of Science by two independent authors. We examined the Hamilton Depression Scale (HAMD), Activities of daily living (ADL), Neurologic function as efficacy endpoints, and the incidence of adverse events as safety profiles. Seventeen eligible studies, including 267 clinical trials were included in this study.

Results	The results showed that High-Frequency Repetitive Transcranial Magnetic Stimulation (HfrTMS), **Acupuncture/EA+conventional treatment**, Escitalopram, Modified Sini San, Moxibustion, Xiaoyao Formula, Paroxetine, Chinese herbal medicine, Exercise, Citalopram, and Cognitive behavioral therapy are beneficial for improving the depression symptoms of patients with PSD. HfrTMS and Sertraline may have an impact on slowing the scores of activities of daily living or neurologic function. In addition, **Acupuncture/EA+conventional**, Escitalopram, Citalopram, Sertraline, and Fluoxetine showed no serious adverse events in PSD patients.
Conclusions	Our study demonstrated that 11 treatment methods can effectively improve the condition of PSD patients.

2.5. Hung 2019

Hung CY, Wu XY, Chung VC, Tang EC, Wu JC, Lau AY. Overview of systematic reviews with meta-analyses on acupuncture in post-stroke cognitive impairment and depression management. Integr Med Res. 2019;8(3):145-159. [199813].

Background	Acupuncture has been using as an alternative non-pharmacological therapy in the management of post stroke depression and cognitive impairment but its effectiveness and safety remain controversial. We conducted an overview of systematic reviews with meta-analyses to evaluate the evidence on the effect of acupuncture in the treatment of stroke with conventional medicine intervention.
Methods	Systematic reviews summarized the treatment effects of acupuncture for post stroke cognitive impairment and post stroke depression were considered eligible. Methodological quality of included systematic reviews was assessed using A Measurement Tool to Assess systematic Reviews 2 (AMSTAR 2).
Results	Four systematic reviews on post stroke cognitive impairment and ten systematic reviews on post stroke depression with good methodological quality were included. Meta-analyses revealed that acupuncture plus cognitive rehabilitation; and acupuncture or moxibustion plus cognitive rehabilitation, versus cognitive rehabilitation demonstrated statistically significant increase in Mini-Mental State Examination scores in compared to cognitive rehabilitation after 4 weeks treatment [Pooled weighted mean difference (WMD) = 3.14, 95% confidence interval (CI) = 2.06 to 4.21, I2 = 36%]; and (Pooled WMD = 3.22, 95% CI = 2.09 to 4.34, I2 = 0%). Furthermore, acupuncture versus antidepressant demonstrated statistically significant improve depression measured by increasing in 17-item Hamilton Depression Rating Scale in comparing to cognitive rehabilitation after 2 weeks treatment (Pooled WMD= -2.34, 95% CI= -3.46 to -1.22, I2 = 5%). Acupuncture usage was not associated with increased risk of adverse events.
Conclusions	Acupuncture is safe and improves cognitive function and depressive disorder without obvious serious adverse events for post stroke patients.

3. Clinical Practice Guidelines

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

3.1. American Heart Association, American Stroke Association (AHA, ASA, USA) 2026 ⊕

- Prabhakaran S, Gonzalez NR, Zachrison KS, Adeoye O, Alexandrov AW, Ansari SA, Chapman S, Czap AL, Dumitrascu OM, Ishida K, Jadhav AP, Johnson B, Johnston KC, Khatri P, Kimberly WT,

Lee VH, Leslie-Mazwi TM, Mac Grory B, Madsen TE, Menon B, Mistry EA, Park S, Parker S, Pérez de la Ossa N, Reeves M, Saiz T, Scott PA, Schwartzberg D, Sheth SA, Sporns PB, Times S, Tjoumakaris S, Wolfe SQ, Yaghi S; Peer Review Committee. 2026 Guideline for the Early Management of Patients With Acute Ischemic Stroke: A Guideline From the American Heart Association/American Stroke Association. Stroke. 2026 Jan 26. https://doi.org/10.1161/str.0000000000000513

- Richards LG, Ifejika NL, Stein J, Bahouth MN, Abshire Saylor M, Barrett AM, Chen P, Deutsch AF, Dusenbury W, Ellis C Jr, Eng J, Fleet J, Ford HR, Grattan ES, Harvey RL, Jones CA, Krishnan C, Kutzle S, Matthews D, Mazwi N, Minga J, Nilsen DM, Noser E, Porter HR, Raghavan P, Rose DK, Skidmore ER, St-Onge MP, Stoykov ME, Schettini AT, Terrill AL, Tirschwell DL, Vilar P, Whitaker-Hilbig A, Zorowitz R; Peer Review Committee. 2026 Guideline for Adult Stroke Rehabilitation and Recovery: A Guideline From the American Heart Association and American Stroke Association. Stroke. 2026 Aug 27. https://doi.org/10.1161/str.0000000000000536

2. In patients diagnosed with PSD, treatment with antidepressants and/or nonpharmacological interventions (ie, psychotherapy, noninvasive brain stimulation, **acupuncture**) is recommended to improve depressive symptoms. (1, B-R)

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1. Li XB, Wang J, Xu AD, Huang JM, Meng LQ, Huang RY, Xu J. Clinical effects and safety of electroacupuncture for the treatment of post-stroke depression: a systematic review and meta-analysis of randomised controlled trials. Acupunct Med. 2018;36:284-293. https://doi.org/10.1136/acupmed-2016-011300
2. Wang X, Cai W, Wang Y, Huang S, Zhang Q, Wang F. Is electroacupuncture an effective and safe treatment for poststroke depression? An updated systematic review and meta-analysis. Biomed Res Int. 2021;2021:8661162. https://doi.org/10.1155/2021/8661162
3. Zhang L, Chen B, Yao Q, Chen W, Yang W, Yang W, He L, Zhang Y. Comparison between acupuncture and antidepressant therapy for the treatment of poststroke depression: systematic review and meta-analysis. Medicine (Baltimore). 2021;100:e25950. - https://doi.org/10.1097/MD.0000000000025950
4. Zhang K, Cui G, Gao Y, Shen W. Does acupuncture combined with antidepressants have a better therapeutic effect on post-stroke depression? A systematic review and meta-analysis. Acupunct Med. 2021;39:432-440. https://doi.org/10.1177/0964528420967675

3.2. Department of Veterans Affairs and Department of Defense (VA/DoD, USA) 2024 Ø

VA/DoD Clinical Practice Guideline for Management of Stroke Rehabilitation. Department of Veterans Affairs and Department of Defense. Washington, DC: U.S. Government Printing Office. 2024. https://www.healthquality.va.gov/guidelines/Rehab/stroke/VADoD-2024-Stroke-Rehab-CPG-Full-CPG_final_508.pdf

43. There is insufficient evidence to recommend for or against acupuncture, either alone or as an adjunct to pharmacotherapy, for depression following stroke. (Neither for nor against / Reviewed, New-added)

References cited:

1. Li C, Chen S, Liu S, Mu Y, Su M. Effect of acupuncture combined with antidepressants on post-stroke depression: a network meta-analysis of nine acupuncture therapies. Front Neurol.

2023;14:979643. https://doi.org/10.3389/fneur.2023.979643
2. Su IJ, Liao L, Huang F. A meta-analysis of the effect of abdominal acupuncture on post-stroke depression. Med Acupunct. 2021;33(4):269-277. https://doi.org/10.1089/acu.2021.0001
3. Wang X, Cai W, Wang Y, Huang S, Zhang Q, Wang F. Is electroacupuncture an effective and safe treatment for poststroke depression? An updated systematic review and meta-analysis. Biomed Res Int. 2021;2021:8661162. https://doi.org/10.1155/2021/8661162
4. Hang X, Li J, Zhang Y, Li Z, Zhang Y, Ye X, et al. Efficacy of frequently used acupuncture methods for specific parts and conventional pharmaceutical interventions in treating post-stroke depression: a network meta-analysis. Complement Ther Clin Pract. 2021;45:101471. https://doi.org/10.1016/j.ctcp.2021.101471

3.3. Stroke Foundation (Australia, New-Zealand) 2022 ⊕

Australian and New Zealand Clinical Guidelines for Stroke Management - Chapter 6: Managing complications. https://app.magicapp.org/#/guideline/WE8wOn

For stroke survivors with depression or depressive symptoms, acupuncture may be used. (Zhang et al 2010) [Weak recommendation].

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1. Zhang ZJ, Chen HY, Yip KC, Ng R, Wong VT. The effectiveness and safety of acupuncture therapy in depressive disorders: systematic review and meta-analysis. J Affect Disord. 2010 Jul;124(1-2):9-21. https://doi.org/10.1016/j.jad.2009.07.005

3.4. Japan Stroke Society (JSS, Japan) 2021 ⊕

The Japan Stroke Society. [Japanese Guidelines for the Management of Stroke, 2021] . Kyowa Kikaku Co. Ltd.; 2021 [in Japanese] . *Cited b*y Okawa Y, Yamashita H, Masuyama S, Fukazawa Y, Wakayama I. Quality assessment of Japanese clinical practice guidelines including recommendations for acupuncture. Integr Med Res. 2022 Sep;11(3):100838. https://doi.org/10.1016/j.imr.2022.100838

Acupuncture. May be considered for post stroke depression.

3.5. Canadian Partnership for Stroke Recovery (CPSR, Canada) 2018 ⊕

Evidence-based review of stroke rehabilitation: 18th edition, Canadian Partnership for Stroke Recovery (CPSR). 2018. [197578]. URL/

Post Stroke Depression and Mood Disorders. There is Level 1b evidence that a combination of acupuncture and herbal medicine reduces depressive symptoms post stroke when compared to standard care. There is Level 1b evidence that acupuncture is no more effective than sham acupuncture in reducing depressive symptoms post stroke. There is Level 1b evidence that dense cranial acupuncture reduces post-stroke depressive symptoms in the short term when compared to non-invasive cranial acupuncture. There is Level 1b and Level 2 evidence that acupuncture reduces post-stroke depressive symptoms in the short term when compared to antidepressants. There is Level 2 and Level 4 evidence that electroacupuncture reduces depressive symptoms post stroke. There is limited Level 2 evidence that meridian acupressure reduces depressive symptoms post stroke when compared to standard care.

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