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Tension-type Headache

Céphalées de tension

Articles connexes: - céphalées - migraines - céphalées neurovasculaires -

1. Systematic Reviews and Meta-Analysis

1.1. Generic Acupuncture

1.1.1. Lin 2025

Lin PT, Su SY, Shih CL. The efficacy of acupuncture for tension-type headache: a systematic review and meta-analysis of randomized controlled trials. J Oral Facial Pain Headache. 2025 Dec;39(4):60-69. https://doi.org/10.22514/jofph.2025.067

Background	Tension-type headache (TTH) is a common primary headache disorder characterized by bilateral, non-pulsating, mild-to-moderate pressing or tightening pain. The objective of this study was to investigate the efficacy of acupuncture for TTH using meta-analysis.
Methods	We adhered to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to conduct this research. A systematic search of multiple electronic databases, including PubMed, EMBASE, and the Cochrane Library, was conducted, covering all literature from their inception to August 2024. The articles investigating the efficacy of acupuncture for patients with TTH were included. Meta-analyses were used to pooled the effect size using RevMan 5.4.
Results	A total of **six randomized controlled trials (including 927 patients)** were included. The results revealed the acupuncture group showing significant decrease in headache frequency at 6 weeks post-treatment (standardized mean difference (SMD) = -0.23; 95% confidence interval (CI): -0.43 to -0.03; p = 0.03), while the acupuncture group had higher odds of headache relief when compared with the sham-acupuncture group (odds ratio (OR) = 1.85; 95% CI: 1.34 to 2.57; p < 0.001). In subgroup analysis, acupuncture showed significant decrease in pain level compared to sham-acupuncture when patients received more than one month or 10 treatment sessions (SMD = -0.32; 95% CI: -0.56 to -0.09; p = 0.006).
Conclusion	Our results suggest that acupuncture could be effective for TTH when the treatment period extends beyond one month or includes more than 10 sessions.

1.1.2. Onan 2025

Onan D, Arıkan H, Ekizoğlu E, Taşdelen B, Özge A, Martelletti P. The efficacy of physiotherapy approaches in chronic tension-type headache: a systematic review and meta-analysis. J Oral Facial Pain Headache. 2025 Mar;39(1):34-48. https://doi.org/10.22514/jofph.2025.003

Backgound	Although pharmacologic therapies are considered the first choice for the treatment of chronic tension-type headache (CTTH), physiotherapy and rehabilitation approaches are also used in the management of patients with CTTH. This study aimed to investigate the efficacy of physiotherapy approaches in CTTH through a systematic review and meta-analysis.
Methods	The following electronic databases were searched, PubMed and Web of Science databases. Common primary outcomes from randomized controlled trials (RCTs) were changes in the intensity and duration of headaches, headache frequency, disability and headache impact. The methodologic quality (completeness of reporting and risk of bias) of trial reports included in systematic reviews was assessed using the Physiotherapy Evidence Database scale ratings. We also performed data synthesis and quantitative analysis of the eligible data.
Results	Nine RCTs were included in the review. Seven studies related to intensity of headache (IH), three on headache frequency (HF), three on headache duration (HD), and two on headache impact were eligible for quantitative analysis. Analysis of the data showed that neck-shoulder strength exercises, **electroacupuncture**, and approaches targeting muscle relaxation improved the IH (-1.17 (-1.86, -0.49) $p < 0.01$) and reduced the HD (-0.71 (-1.31, -0.12), $p = 0.02$); the approaches targeting muscle relaxation and neck-shoulder strength exercises induced a significant decrease in the HF (-1.36 (-2.47, -0.26), $p = 0.02$) in patients with CTTH in comparison with the control groups.
Conclusions	Neck-shoulder strength exercises and muscle relaxation are effective in reducing the intensity, duration, and frequency of headaches and **electroacupuncture** causes significant improvement in the duration and intensity of headaches in patients with CTTH.

1.1.3. Tao 2024 (vs tricyclic antidepressants)

Tao QF, Huang YB, Yuan L, Shi YZ, Qin D, Ye K, Peng WY, Xie CR, Zheng H. Acupuncture versus tricyclic antidepressants in the prophylactic treatment of tension-type headaches: an indirect treatment comparison meta-analysis. J Headache Pain. 2024 Apr 29;25(1):67. https://doi.org/10.1186/s10194-024-01776-5.

Backgound	Acupuncture showed better improvement than sham acupuncture in reducing attack frequency of tension-type headache (TTH), but its effectiveness relative to first-line drugs for TTH is unknown, which impedes the recommendation of acupuncture for patients who are intolerant to drugs for TTH. We aimed to estimate the relative effectiveness between acupuncture and tricyclic antidepressants (TCAs) through indirect treatment comparison (ITC) meta-analysis.
Methods	We searched Ovid Medline, Embase, and Cochrane Library from database inception until April 13, 2023. Randomized controlled trials of TCAs or acupuncture in the prevention of TTH in adults were included. The primary outcome was headache frequency. The secondary outcomes were headache intensity, responder rate, and adverse event rate. Bayesian random-effect models were used to perform ITC meta-analysis, and confidence of evidence was evaluated by using the GRADE approach.
Results	A total of **34 trials involving 4426 participants** were included. Acupuncture had similar effect with TCAs in decreasing TTH frequency (amitriptyline: mean difference [MD] -1.29, 95% CI -5.28 to 3.02; amitriptylinoxide: MD -0.05, 95% CI -6.86 to 7.06) and reducing TTH intensity (amitriptyline: MD 2.35, 95% CI -1.20 to 5.78; clomipramine: MD 1.83, 95% CI -4.23 to 8.20). Amitriptyline had a higher rate of adverse events than acupuncture (OR 4.73, 95% CI 1.42 to 14.23).
Conclusion	Acupuncture had similar effect as TCAs in reducing headache frequency of TTH, and acupuncture had a lower adverse events rate than amitriptyline, as shown by very low certainty of evidence.

1.1.4. Kang 2023

Kang WL, Xiao XJ, Fan R, Zhong DL, Li YX, She J, Li J, Feng Y, Jin RJ. Acupuncture for tension-type headache: a systematic review and meta-analysis of randomized controlled trials. Front Neurol. 2023 May 10;13:943495. https://doi.org/10.3389/fneur.2022.943495

Background	Tension-type headache (TTH) is the most common neurologic disease worldwide. Acupuncture is commonly applied to treat TTH, but evidence of acupuncture for TTH is contradictory based on previous meta-analyses. Therefore, we conducted this systematic review and meta-analysis to update the evidence of acupuncture for TTH and aimed to provide a valuable reference for clinical application.
Methods	We searched 9 electronic databases from their inceptions to July 1, 2022 for randomized controlled trials (RCTs) of acupuncture for TTH. We also manually searched reference lists and relevant websites, and the experts in this field were consulted for possible eligible studies. Two independent reviewers conducted literature screening, data extraction, and risk of bias assessment. The revised Cochrane risk-of-bias tool (ROB 2) was used to assess the risk of bias of included studies. Subgroup analyses were carried out based on frequency of acupuncture, total sessions, treatment duration, needle retention, types of acupuncture and categories of medication. Data synthesis was performed using Review Manager 5.3 and Stata 16. The Grading of Recommendations Assessment, Development and Evaluation Approach (GRADE) was used to evaluate the certainty of evidence of each outcome. Meanwhile, the Standards for Reporting Interventions in Clinical Trials of Acupuncture (STRICTA) was used to assess the reporting quality of interventions in clinical trials of acupuncture.
Results	**30 RCTs involving 2,742 participants** were included. According to ROB 2, 4 studies were considered as low risk, and the rest studies were some concerns. After treatment, compared with sham acupuncture, acupuncture had greater effect in improvement of responder rate [3 RCTs, RR = 1.30, 95%CI (1.13, 1.50), I2 = 2%, moderate certainty] and headache frequency [5 RCTs, SMD = -0.85, 95%CI (-1.58, -0.12), I2 = 94%, very low certainty]. In contrast to medication, acupuncture was more effective to reduce pain intensity [9 RCTs, SMD = -0.62, 95%CI (-0.86, -0.38), I2 = 63%, low certainty]. Adverse events were evaluated in 16 trials, and no serious event associated with acupuncture occurred.
Conclusions	Acupuncture may be an effective and safe treatment for TTH patients. Due to low or very low certainty of evidence and high heterogeneity, more rigorous RCTs are needed to verify the effect and safety of acupuncture in the management of TTH.

1.1.5. Tao 2023

Tao QF, Wang XY, Feng SJ, Xiao XY, Shi YZ, Xie CR, Zheng H. Efficacy of acupuncture for tension-type headache prophylaxis: systematic review and meta-analysis with trial sequential analysis. J Neurol. 2023 Jul;270(7):3402-3412. https://doi.org/10.1007/s00415-023-11695-1

Backgound	Acupuncture has been shown to reduce tension-type headache (TTH) frequency in previous studies. Nevertheless, repeated significance testing might inflate type I error. We aimed to verify the effectiveness and safety of acupuncture in reducing TTH frequency by meta-analysis and trial sequential analysis (TSA).
Methods	Ovid Medline, Embase, and Cochrane Library were searched until September 29, 2022. Randomized controlled trials comparing acupuncture with sham acupuncture, no acupuncture, or other active therapies in adults with TTH were included. The primary outcome was TTH frequency. The secondary outcomes were responder rate and adverse event.

Results	**Fourteen studies involving 2795 participants** were included. Acupuncture had more reduction than sham acupuncture in TTH frequency, both after treatment (standardized mean difference [SMD] - 0.80, 95% CI - 1.36 to - 0.24, P = 0.005) and at the follow-up period (SMD - 1.33, 95% CI - 2.18 to - 0.49, P = 0.002), while TSA showed the included sample size did not exceed required information size (RIS). Acupuncture was superior over no acupuncture after treatment (SMD - 0.52, 95% CI - 0.63 to - 0.41, P < 0.001), and cumulative sample size reached RIS. In terms of responder rate, acupuncture had a higher responder rate compared with sham acupuncture both after treatment (relative ratio [RR] 1.28, 95% CI 1.12 to 1.46, P = 0.0003) and the follow-up period (RR 1.37, 95% CI 1.19 to 1.58, P < 0.0001), but the sample size is inadequate.
Conclusion	Acupuncture is an efficacious and safe treatment for TTH prevention, but this conclusion might be limited by the generally very low to low quality evidence. TSA suggested that high-quality trials are needed to verify the efficacy and safety of acupuncture compared to sham acupuncture.

1.1.6. Pi 2022 ☆☆

Pi C, Liu Y, Li L, Tang W, Yan X, Yu S. Effects on neuromodulation, acupuncture, and aerobic exercises on migraine and tension-type headache outcomes: A systematic review and meta-analysis. Medicine (Baltimore). 2022 Nov 11;101(45):e30530. https://doi.org/10.1097/MD.0000000000030530

Background	Headache disorders are common diseases that cause a social burden. This systematic review and meta-analysis aimed to evaluate the effects of various non-pharmacological treatments to address or prevent acute headaches, including neuromodulation, acupuncture, and aerobic exercises in patients with episodic migraine and tension-type headache (TTH).
Methods	We performed a systematic search of the electronic databases PubMed, Cochrane Library, Embase, China National Knowledge Infrastructure, WANFANG MEDICINE ONLINE, and Chinese Medical Journal database using Stata/SE 14.0 to obtain weighted mean differences (WMDs). The outcomes included monthly headache days, headache intensity, headache duration, days per month of acute medication use, and the Medical Outcomes Study 36-Item Short-Form Health Survey.
Results	Of 872 identified articles, 27 were included in the meta-analysis. Neuromodulation was associated with reduced headache days (WMD: -1.274, 95% CI [-1.914, -0.634], P < .001), duration (WMD: -2.2, 95% CI [-3.32, -0.107], P < .001) and medication consumption (WMD: -1.808, 95% CI [-2.546, -1.071], P < .001) in cases of migraine. **Acupuncture was associated with the alleviation of headache days (WMD: -0.677, 95% CI [-0.932, -0.422], P < .001) and intensity (WMD: -0.893, 95% CI [-1.573, -0.212], P = .01) in cases of migraine and acute medication use (WMD: -3.29, 95% CI [-4.86, -1.72], P < .001) in cases of TTH**. Aerobic exercise was associated with reduced headache duration (WMD: -5.1, 95% CI [-8.97, -1.22], P = .01) in cases of TTH. The risk of bias for included articles was moderate.
Conclusions	There is low- and moderate-quality evidence that neuromodulation, **acupuncture**, and aerobic exercises are associated with attenuated headache symptoms in patients with episodic migraine or TTH. However, high-quality studies are needed to draw more detailed conclusions.

1.1.7. Kolokotsios 2021 Ø

Kolokotsios S, Stamouli A, Koukoulithras I, Plexousakis M, Drousia G. The Effectiveness of Acupuncture on Headache Intensity and Frequency in Patients With Tension-Type Headache: A Systematic Review and Meta-Analysis. Cureus. 2021;13(4). [218861]. doi

Introduction	Headache disorders are one of the most common health problems. Tension-type headache (TTH) is the most prevalent type of primary headache in adults. Several conservative treatments have been used for the management of TTH, such as analgesics, acupuncture, manual therapy, spinal mobilization. This study aims to examine the effectiveness of acupuncture in patients with TTH.
Methods and materials	PubMed, PEDro database, Cochrane Library, and Google Scholar were searched from January 2000 until February 2021, as well as the reference lists from identified articles. Studies of various acupuncture types were included, but only randomized controlled trials and clinical trials were selected. The studies were screened using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) question. Details about the type of acupuncture, sample size, outcome measures, results, and statistical significance were extracted from the selected studies. A short-term (after the last treatment) and long-term meta-analysis for pain intensity and frequency of headaches was conducted. The I2 index, as well as the x2 test, were used to determine the heterogeneity between studies. A random-effects meta-analysis was carried out.
Results	From all the studies found in the mentioned databases, only **15 studies with 1272 participants** met the criteria. In the meta-analysis, four studies with 557 participants were included. The headaches' frequency after the last treatment was not significantly lower in the acupuncture group than in the placebo/sham group (mean difference: -1.53 [CI: -4.73, 1.67]). However, acupuncture seems to improve the frequency of headaches in the long term, although the results were not statistically significant p=0.06. Furthermore, there was a reduction of 1.55 days per month of headaches in the acupuncture group versus placebo (mean difference: -1.55 [CI: -3.19, 0.09]), but it was not statistically significant. The visual analog scale (VAS) score of the acupuncture group slightly reduced (-0.29) compared with the control group after the last treatment (mean difference: -0.29 [CI: -1.21, 0.62]), although the two groups were not statistically significant p=0.53. In the long term, acupuncture demonstrated a statistical (p=0.009) and clinical benefit compared with placebo/sham. Statistical analyses between the two groups showed a reduction of 0.41 in the VAS scale at the acupuncture group (mean difference: -0.41 [CI: -0.72, -0.10]).
Conclusion	Overall, after the meta-analysis of articles with high methodological quality, acupuncture's effectiveness compared to sham seems to be statistically non-significant on headache intensity and frequency in patients with TTH after the treatment. Both headache intensity and frequency were reduced in the long term, although only in the pain intensity, the results were statistically significant. Therefore, more studies on this topic should be conducted to examine its effectiveness in headache frequency and intensity.

1.1.8. Krøll 2021 ☆

Krøll LS, Callesen HE, Carlsen LN, Birkefoss K, Beier D, Christensen HW, Jensen M, Tómasdóttir H, Würtzen H, Høst CV, Hansen JM. Manual joint mobilisation techniques, supervised physical activity, psychological treatment, acupuncture and patient education for patients with tension-type headache. A systematic review and meta-analysis. J Headache Pain. 2021;22(1):96. [221400]. https://doi.org/10.1186/s10194-021-01298-4

Background	Tension-type headache (TTH) has been ranked the second most prevalent health condition worldwide. Non-pharmacological treatments for TTH are widely used as a supplement or an alternative to medical treatment. However, the evidence for their effects are limited. Therefore, the aim of this study was to review the evidence for manual joint mobilisation techniques, supervised physical activity, psychological treatment, acupuncture and patient education as treatments for TTH on the effect of headache frequency and quality of life.
Methods	A systematic literature search was conducted from February to July 2020 for clinical guidelines, systematic reviews, and individual randomised controlled trials (RCT). The primary outcomes measured were days with headache and quality of life at the end of treatment along with a number of secondary outcomes. Meta-analyses were performed on eligible RCTs and pooled estimates of effects were calculated using the random-effect model. The overall certainty of evidence was evaluated using the Grading of Recommendations, Assessment, Development, and Evaluation approach (GRADE). In addition, patient preferences were included in the evaluation.
Results	In all, 13 RCTs were included. Acupuncture might have positive effects on both primary outcomes. Supervised physical activity might have a positive effect on pain intensity at the end of treatment and headache frequency at follow-up. Manual joint mobilisation techniques might have a positive effect on headache frequency and quality of life at follow-up. Psychological treatment might have a positive effect on stress symptoms at the end of treatment. No relevant RCTs were identified for patient education. The overall certainty of evidence was downgraded to low and very low. No serious adverse events were reported. A consensus recommendation was made for patient education and weak recommendations for the other interventions.
Conclusion	Based on identified benefits, certainty of evidence, and patient preferences, manual joint mobilisation techniques, supervised physical activity, psychological treatment, acupuncture, and patient education can be considered as non-pharmacological treatment approaches for TTH. Some positive effects were shown on headache frequency, quality of life, pain intensity and stress symptoms. Few studies and low sample sizes posed a challenge in drawing solid conclusions. Therefore, high-quality RCTs are warranted.

1.1.9. Turkistani 2021 ☆

Turkistani A, Shah A, Jose AM, Melo JP, Luenam K, Ananias P, Yaqub S, Mohammed L. Effectiveness of Manual Therapy and Acupuncture in Tension-Type Headache: A Systematic Review. Cureus. 2021;13(8). [222935]. https://doi.org/10.7759/cureus.17601

Background	Tension-type headache is one of the most prevalent types of headache. The common presentation is a mild-to-moderate dull aching pain around the temporal region, like a tight band around the forehead, neck, shoulder, and sometimes behind eyes. It can occur at any age but most commonly in the adult female population. The exact underlying mechanism is not clear but muscle tension is one of the main causes, which can be due to stress and anxiety. There are several non-pharmacologic treatment options suggested for tension-type headaches, such as cognitive behavioral therapy, relaxation, biofeedback, acupuncture, exercise, manual therapy, and even some home remedies.
Objective	This systematic review was performed to evaluate the effectiveness of acupuncture and manual therapy in tension-type headaches. The literature search was primarily done on PubMed.

Results	Eight articles involving 3846 participants showed evidence that acupuncture and manual therapy can be valuable non-pharmacological treatment options for tension-type headaches. Acupuncture was compared to routine care or sham intervention. Acupuncture was not found to be superior to physiotherapy, exercise, and massage therapy. Randomized controlled trials done in various countries showed manual therapy also significantly decreased headache intensity. Manual therapy has an efficacy that equals prophylactic medication and tricyclic antidepressants in treating tension-type headaches.
Conclusion	The available data suggests that both acupuncture and manual therapy have beneficial effects on treating symptoms of tension-type headache. However, further clinical trials looking at long-term benefits and risks are needed.

1.1.10. Zhang 2018 ☆☆

Zhang Xue, Bu He Ma Yao ,Li Hong- Yan-Xua. [Meta- analysis of Acupuncture Therapy in the Treatment of Tension- type Headache]. Journal of Clinical Acupuncture and Moxibustion. 2018;34(1):51-5. [188159].

Objective	To evaluate the therapeutic effect of acupuncture treatment for tension -type headache.
Methods	RCTs acupuncture treating tension -type headache were searched in domestic and overseas databases, and RevMan 5. 3 software was applied for Meta-analysis.
Results	**10 articles were included totally**. Two of them were grade A researches, and the other eight were grade B researches. Results of Meta -analysis indicated that the total efficiency of acupuncture was 95%,which Was significantly higher than sham acupuncture RR:1. 25 , CI (1.08~1.44) , Z=2. 99,P=0.003 <0.05] , indicating that acupuncture was effective in relieving tension - type headache, it was also higher than NSAIDs [RR:1. 22 , 95% CI (1,06-1.40) , Z : 2.84,P0.04<00.05], indicating that acupuncture was superior to NSAIDs in relieving tension -type headache. Different acupuncture therapy were also showed difference in relieving tension-type headache [RR =1. 35, 95% CI (1,02~1,79) , Z=2. 10 ,P =0.04<0. 05],indicating different acupuncture therapy had different curative effect in relieving tension -type headache.
Conclusion	The acupuncture treatment is effective for tension -type headache and the therapeutic effect is better than NSAIDs. Different acupuncture therapy has different curative effect.

1.1.11. Tang 2017 (cervicogenic headache) ☆☆

Tang Xu, Ren Lu-Ying, Li Yi-Mei. [Acupuncture treatment for the cervicogenic headache——updated systematic review]. Chinese Journal of Pain Medicine. 2017;11. [52179].

Objective	To systematically assess the efficacy of acupuncture treatment for cervicogenic headache.
Methods	Reviewers search databases including info Med, CNKI, VIP, Wanfang database online version, Pub Med, Embase, Web of Science, Cochrane Library and clinical trials. Gov from database establishment up to March 31, 2017, using the Review Manager 5. 3 software for Meta-analysis.

Results	This study contained a total of **13 trials, including 1783 patients**. Meta-analysis showed: (1) The effective rate of acupuncture treatment for cervicogenic headache is higher than oral medications (RR=1. 35, 95% CI (1. 26, 1. 45)]. (2) The acupuncture treatment of cervicogenic headache has better curative effect than non-steroidal anti-inflammatory drug (RR=1. 28, 95% CI (1. 20, 1. 38)]. (3) The score of VAS for cervicogenic headache has no obvious difference between acupuncture and non-steroidal antipyretic analgesic drugs or cervical joint traction [MD=0. 93, 95%CI (-0. 29, 2. 16)].
Conclusion	Acupuncture treatment for cervicogenic headache is effective and safe. The quality of the literature is moderate. More high quality clinical studies are needed to further explore the effectiveness and safety of acupuncture treatment for cervicogenic headache.

1.1.12. Linde 2016 ☆☆☆

Linde K, Allais G, Brinkhaus B, Fei Y, Mehring M, Shin BC, Vickers A, White AR. Acupuncture for the prevention of tension-type headache. Cochrane Database Syst Rev. 2016;4:CD007587. [186525].

Background	Acupuncture is often used for prevention of tension-type headache but its effectiveness is still controversial. This is an update of our Cochrane review originally published in Issue 1, 2009 of The Cochrane Library.
Objectives	To investigate whether acupuncture is a) more effective than no prophylactic treatment/routine care only; b) more effective than 'sham' (placebo) acupuncture; and c) as effective as other interventions in reducing headache frequency in adults with episodic or chronic tension-type headache.
Search Methods	We searched CENTRAL, MEDLINE, EMBASE and AMED to 19 January 2016. We searched the World Health Organization (WHO) International Clinical Trials Registry Platform to 10 February 2016 for ongoing and unpublished trials. Selection Criteria: We included randomised trials with a post-randomisation observation period of at least eight weeks, which compared the clinical effects of an acupuncture intervention with a control (treatment of acute headaches only or routine care), a sham acupuncture intervention or another prophylactic intervention in adults with episodic or chronic tension-type headache. Data Collection And Analysis: Two review authors checked eligibility; extracted information on participants, interventions, methods and results; and assessed study risk of bias and the quality of the acupuncture intervention. The main efficacy outcome measure was response (at least 50% reduction of headache frequency) after completion of treatment (three to four months after randomisation). To assess safety/acceptability we extracted the number of participants dropping out due to adverse effects and the number of participants reporting adverse effects. We assessed the quality of the evidence using GRADE (Grading of Recommendations Assessment, Development and Evaluation).

Main Results	**Twelve trials (11 included in the previous version and one newly identified) with 2349 participants** (median 56, range 10 to 1265) met the inclusion criteria.Acupuncture was compared with routine care or treatment of acute headaches only in two large trials (1265 and 207 participants), but they had quite different baseline headache frequency and management in the control groups. Neither trial was blinded but trial quality was otherwise high (low risk of bias). While effect size estimates of the two trials differed considerably, the proportion of participants experiencing at least 50% reduction of headache frequency was much higher in groups receiving acupuncture than in control groups (moderate quality evidence; trial 1: 302/629 (48%) versus 121/636 (19%); risk ratio (RR) 2.5; 95% confidence interval (CI) 2.1 to 3.0; trial 2: 60/132 (45%) versus 3/75 (4%); RR 11; 95% CI 3.7 to 35). Long-term effects (beyond four months) were not investigated.Acupuncture was compared with sham acupuncture in seven trials of moderate to high quality (low risk of bias); five large studies provided data for one or more meta-analyses. Among participants receiving acupuncture, 205 of 391 (51%) had at least 50% reduction of headache frequency compared to 133 of 312 (43%) in the sham group after treatment (RR 1.3; 95% CI 1.09 to 1.5; four trials; moderate quality evidence). Results six months after randomisation were similar. Withdrawals were low: 1 of 420 participants receiving acupuncture dropped out due to adverse effects and 0 of 343 receiving sham (six trials; low quality evidence). Three trials reported the number of participants reporting adverse effects: 29 of 174 (17%) with acupuncture versus 12 of 103 with sham (12%; odds ratio (OR) 1.3; 95% CI 0.60 to 2.7; low quality evidence).Acupuncture was compared with physiotherapy, massage or exercise in four trials of low to moderate quality (high risk of bias); study findings were inadequately reported. No trial found a significant superiority of acupuncture and for some outcomes the results slightly favoured the comparison therapy. None of these trials reported the number of participants dropping out due to adverse effects or the number of participants reporting adverse effects.Overall, the quality of the evidence assessed using GRADE was moderate or low, downgraded mainly due to a lack of blinding and variable effect sizes.
Authors' Conclusions	The available results suggest that **acupuncture is effective for treating frequent episodic or chronic tension-type headaches**, but further trials - particularly comparing acupuncture with other treatment options - are needed.

1.1.13. Zhang 2013 ☆☆

Zhang Kai, Liu Yu, Jiang Ge-Li. [Acupuncture treatment for the of cervicogenic headache: a systematic review]. Chinese Journal of Pain Medicine. 2013;11:643-647. [186961].

Objective	To systematically assess the efficacy and safety of acupuncture for the treatment of cervicogenic headache.
Methods	Randomized controlled trials (RCTs) involving acupuncture for the treatment of cervicogenic headache were identifed from CBM (1978 to 2012), VIP (1989 to 2012), Wanfang Database (1998 to 2012), CNKI (1979 to 2012), PubMed (1966 to 2012), EMbase (1980 to 2012), and the Cochrane Library (Issue 4, 2012). Some relevant journals were hand-searched. Data were extracted by two reviewers independently and went through crosscheck. Data quality was evaluated with Cochrane Reviewer’ s Manual 4. 2. 8. The Cochrane Collaboration’ s RevMan 5. 0 software was used for meta-analyses.

Results	A total of **8 trials involving 1177 patients** were included. (1) The effective rate: ① Effect of the acupuncture group is signifcantly better than that of non steroidal anti-infammatory drug group [RR=1. 41, 95% CI (1. 18, 1. 69)]. ②There was no statistically significant difference between acupuncture and non steroidal anti-inflammatory plus muscle relaxant drug group [RR=1. 36, 95%CI (0. 75, 2. 50)]. ③ Effects of the acupuncture group is signifcantly better than that of Flunarizine drug group [RR=1. 29, 95%CI (1. 05, 1. 58)]. ④ There was no statistically significant difference between acupuncture and nerve block plus votalin [RR=1. 08, 95%CI (0. 97, 1. 21)]. (2) The changes in visual analogue scale (VAS) scores: The score of VAS of headache and cervicodynia had no signifcant differences between acupuncture and non-steroidal anti-infammatory drugs or combined with muscle relaxants [RR=1. 77, 95%CI (-0. 14, 3. 67)].
Conclusion	**Acupuncture therapy is safe and effective in the treatment of cervicogenic headache**. Acupuncture may be superior to western drugs in rapid alleviation of pain. However, because of the defects in the methodological quality of the included trials, the conclusion is to be confrmed by more high quality RCTs.

1.1.14. Linde 2009 ☆☆☆

Linde K, Allais G, Brinkhaus B, Manheimer E, Vickers A, White Ar. Acupuncture for Tension-Type Headache. Cochrane Database Syst Rev. 2009;1:CD007587. [153158].

Purpose	To investigate whether acupuncture is a) more effective than no prophylactic treatment/routine care only; b) more effective than 'sham' (placebo) acupuncture; and c) as effective as other interventions in reducing headache frequency in patients with episodic or chronic tension-type headache.
Methods	Search strategy: TheCochrane Pain, Palliative & Supportive Care Trials Register, CENTRAL, MEDLINE, EMBASE and the Cochrane Complementary Medicine Field Trials Register were searched to January 2008. Selection criteria: we included randomized trials with a post-randomization observation period of at least 8 weeks that compared the clinical effects of an acupuncture intervention with a control (treatment of acute headaches only or routine care), a sham acupuncture intervention or another intervention in patients with episodic or chronic tension-type headache. Data collection and analysis: two reviewers checked eligibility; extracted information on patients, interventions, methods and results; and assessed risk of bias and quality of the acupuncture intervention. Outcomes extracted included response (at least 50%reduction of headache frequency; outcome of primary interest), headache days, pain intensity and analgesic use.
Results	**Eleven trials with 2317 participants** (median 62, range 10 to 1265) met the inclusion criteria. Two large trials compared acupuncture to treatment of acute headaches or routine care only. Both found statistically significant and clinically relevant short-term (up to 3 months) benefits of acupuncture over control for response, number of headache days and pain intensity. Long-term effects (beyond 3 months)were not investigated. Six trials compared acupuncture with a sham acupuncture intervention, and five of the six provided data for meta-analyses. Small but statistically significant benefits of acupuncture over sham were found for response as well as for several other outcomes. Three of the four trials comparing acupuncture with physiotherapy, massage or relaxation had important methodological or reporting shortcomings. Their findings are difficult to interpret, but collectively suggest slightly better results for some outcomes in the control groups.
Conclusion	In the previous version of this review, evidence in support of acupuncture for tension-type headache was considered insufficient . **Now,with six additional trials, the authors conclude that acupuncture could be a valuable non-pharmacological tool in patients with frequent episodic or chronic tension-type headaches**.

1.1.15. Krishnan 2009 Ø

Krishnan A, Silver N. Headache (chronic tension-type). BMJ Clin Evid. 2009; Jul 22: . [155516] .

Introduction	Chronic tension-type headache (CTTH) is a disorder that evolves from episodic tension-type headache, with daily or very frequent episodes of headache lasting minutes to days. It affects 4.1% of the general population in the USA, and is more prevalent in women (up to 65% of cases).
Methods and outcomes	We conducted a systematic review and aimed to answer the following clinical questions: What are the effects of drug treatments for chronic tension-type headache? What are the effects of non-drug treatments for chronic tension-type headache? We searched: Medline, Embase, The Cochrane Library, and other important databases up to March 2007 (Clinical Evidence reviews are updated periodically; please check our website for the most up-to-date version of this review). We included harms alerts from relevant organisations such as the US Food and Drug Administration (FDA) and the UK Medicines and Healthcare products Regulatory Agency (MHRA).
Results	We found 50 systematic reviews, RCTs, or observational studies that met our inclusion criteria. We performed a GRADE evaluation of the quality of evidence for interventions.
Conclusions	In this systematic review, we present information relating to the effectiveness and safety of the following interventions: **acupuncture**; amitriptyline; analgesics; anticonvulsant drugs; benzodiazepines; botulinum toxin; chiropractic and osteopathic manipulations; cognitive behavioural therapy (CBT); Indian head massage; mirtazapine; relaxation and electromyographic biofeedback; selective serotonin reuptake inhibitor antidepressants (SSRIs); and tricyclic antidepressants (other than amitriptyline).
Acupuncture	[We don't know whether acupuncture is effective in treating CTTH (chronic tension-type)].

1.1.16. Davis 2008 ☆☆

Davis Ma, Kononowech Rw, Rolin Sa, Spierings El. Acupuncture for tension-type headache: a meta-analysis of randomized, controlled trials. J Pain. 2008;. [149101]..

Objectif	We investigated the efficacy and safety of acupuncture for the treatment of tension-type headache by conducting a systematic review and meta-analysis of randomized, controlled trials.
Méthod	The Cochrane Central Register of Controlled Trials, MEDLINE, EMBASE, CINAHL, and PsycINFO were searched from inception through August 2007. No search or language restrictions were applied. **Eight randomized, controlled trials** met our inclusion criteria. Pooled data from 5 studies were used for the meta-analysis. Our primary outcome was headache days per month. We assessed data from 2 time points: during treatment and at long-term follow-up (20-25 weeks). The weighted mean difference (WMD) between acupuncture and sham groups was used to determine effect size, and a validated scale was used to assess the methodological quality of included studies.
Results	During treatment, the acupuncture group averaged 8.95 headache days per month compared with 10.5 in the sham group (WMD, -2.93 [95% CI, -7.49 to 1.64]; 5 trials). At long-term follow-up, the acupuncture group reported an average of 8.21 headache days per month compared with 9.54 in the sham group (WMD, -1.83[95% CI, -3.01 to -0.64]; 4 trials). The most common adverse events reported were bruising, headache exacerbation, and dizziness.

Conclusions	This meta-analysis suggests that **acupuncture compared with sham for tension-type headache has limited efficacy for the reduction of headache frequency**. There exists a lack of standardization of acupuncture point selection and treatment course among randomized, controlled trials. More research is needed to investigate the treatment of specific tension-type headache subtypes.

1.1.17. Silver 2007

Silver N. Headache (chronic tension-type). Clin Evid. 2007.pii: 1205. [148317].

Introduction	Chronic tension-type headache (CTTH) is a disorder that evolves from episodic tension-type headache, with daily or very frequent episodes of headache lasting minutes to days. It affects 4.1% of the general population in the USA, and is more prevalent in women (up to 65% of cases).
Methods and objectives	We conducted a systematic review and aimed to answer the following clinical questions: What are the effects of drug treatments for chronic tension-type headache? What are the effects of non-drug treatments for chronic tension-type headache? We searched: Medline, Embase, The Cochrane Library and other important databases up to October 2005 (Clinical Evidence reviews are updated periodically, please check our website for the most up-to-date version of this review). We included harms alerts from relevant organisations such as the US Food and Drug Administration (FDA) and the UK Medicines and Healthcare products Regulatory Agency (MHRA).
Results	We found 38 systematic reviews, RCTs or observational studies that met our inclusion criteria. We performed a GRADE evaluation of the quality of evidence for interventions.
Conclusions	In this systematic review we present information relating to the effectiveness and safety of the following interventions: **acupuncture**, amitriptyline, benzodiazepines, botulinum toxin, cognitive behavioural therapy, Indian head massage, mirtazapine, regular acute pain relief medication, relaxation and electromyographic biofeedback, serotonin reuptake inhibitor antidepressants, and tricyclic antidepressants (other than amitriptyline).

1.1.18. Jedel 2005 ☆

Jedel E, Carlsson J. Acupuncture in the management of tension-type headache. Phys Ther Rev. 2005; 10: 131-9.[164546] .

Objective	The aim of this systematic review was two-fold: to assess the efficacy of acupuncture in the management of tension-type headache, and to compare three criteria lists assessing the quality of studies.
Méthods	Searches to selected criteria lists were carried out with no time limit using the database for the Cochrane Central Register of Controlled Trials. Articles of controlled clinical trials evaluating the efficacy of acupuncture in the management of tension-type headache were obtained by searching through the databases MEDLINE, CINAHL, EMBASE, AMED and Cochrane Central Register of Controlled Trials up to February 2003. **Six articles** met the criteria for inclusion and three criteria lists were used to assess the internal validity of these studies. The studies were considered to be of high quality or low quality in accordance with the criteria lists utilised.

Results	The results of the trials were considered positive, negative or indifferent based on statistically significant between group differences. The three criteria lists utilised yielded the same results and indicate that two of six studies were of high quality. Results indicated limited evidence for the efficacy of acupuncture in the management of tension-type headache.
Conclusions	This systematic review shows that qualitative assessments by three criteria lists focusing on internal validity, gave the same results, and that **there is limited evidence for the efficacy of acupuncture in the management of tension-type headache**.

1.1.19. Li 2005 Ø

Li Y, Luo C. [Acupuncture for tension-type headache: a systematic review]. Chin J Evid Based Med. 2005;5(2):117-24. [167394]..

Objective	To assess the effectiveness of acupuncture for tension-type headache.
Methods	A systematic review of the relevant randomized controlled trials (RCTs) of acupuncture for tension-type headache was performed using the methods of The Cochrane Collaboration. Trials were collected from The Cochrane Library, Issue 4, 2003, MEDLINE (1966 to March 2004), CBM (1978 to August 2003), VIP (1989 to April 2003) and handsearched all related articles published in Chinese in 2003. The quality of literature was reviewed, and data were extracted by two reviewers independently. Meta-analysis was conducted using RevMan 4.2 software.
Results	**Thirteen RCTs involving 571 patients** were included, of the thirteen RCTs, six were of high methodological quality according to Jadad scale (the Jadad score≥3), and “sham acupuncture” was used as controlled intervention in eight trials. Meta-analysis indicated that no statistical difference was detected between acupuncture and sham acupuncture groups on effectiveness with RR 1.55, 95%CI 0.97 to 2.47 and P=0.07 at the end of treatment. No statistical difference was detected between acupuncture and sham acupuncture groups on visual analogue scale at the end of treatment with WMD □0.55, 95%CI □1.20 to 0.09 and P=0.09; at the end of follow-up of less than 2 months with WMD □0.22, 95%CI □0.87 to 0.42 and P= 0.50 and at the end of follow-up of more than 2 months with WMD □0.65, 95% CI □1.41 to 0.11 and P=0.09.
Conclusions	Comparing acupuncture with sham acupuncture and other treatments, **current evidence can not evaluate whether acupuncture is significantly effective for tension-type headache**, more RCTs of high methodological quality are required.

1.1.20. Vernon 1999 Ø

Vernon H Et Al. systematic review of randomized clinical trials of complementary/alternative therapies in the treatment of tension-type and cervicogenic headache. Complementary Therapies In Medicine. 1999;7(3):142-55. [70896].

Objectives	To conduct a systematic review of the randomized controlled clinical trials (RCTs) of complementary/alternative (CAM) therapies in the treatment of non-migrainous headache (i.e. excluding migraine, cluster and organic headaches).
Design	Systematic review with quality scoring and evidence tables. Main outcome measu Number of RCTs per therapy, quality scores, evidence tables.

Results	Twenty-four RCTs were identified in the categories of **acupuncture (8 RCT)**, spinal manipulation, electrotherapy, physiotherapy, homeopathy and other therapies. Headache categories included tension-type (under various names pre-1988), cervicogenic and post-traumatic. Quality scores for the RCT reports ranged from approximately 30 to 80 on a 100 point scale.
Conclusion	RCTs for CAM therapies of the treatment of non-migrainous headache exist in the literature and demonstrate that clinical experimental studies of these forms of headache can be conducted. **Evidence from a sub-set of high quality studies indicates that some CAM therapies may be useful in the treatment of these common forms of headache**.

1.2. Special outcome

1.2.1. Long term effect

1.2.1.1. Chen 2024

Chen H, Shi H, Gao S, Fang J, Liu X, Liu Z. Durable effects of acupuncture for tension-type headache: A systematic review and meta-analysis. Heliyon. 2024 May 31;10(11):e32174. https://doi.org/10.1016/j.heliyon.2024.e32174

Backgound	Acupuncture may be effective in treating tension-type headache (TTH). The durability of its effects after treatment completion remains inconclusive.
Methods	We searched multiple databases and references from previous reviews for randomized controlled trials (RCTs) which investigated the effectiveness of acupuncture for TTH. We assessed the methodological quality of RCTs using the Cochrane Risk of Bias 2.0 (RoB 2) tool. Primary outcome was response rate, defined as the proportion of participants who reported at least a 50% reduction in monthly headache days from baseline after completion of treatment. Secondary outcomes included headache days, headache intensity, and analgesic use. Safety outcomes were also evaluated.
Results	A total of **seven RCTs involving 3,221 participants** with frequent episodic and chronic TTH were included. Individuals receiving acupuncture reported a significantly higher response rate versus sham acupuncture (SA) immediately and at 1-6 months after completion of treatment ($P<0.05$). Compared with SA, post-treatment results of headache days and headache intensity appeared consistent on the whole, showing associations favoring acupuncture. However, no significant reduction in analgesic use was found post-treatment. Acupuncture showed no superiority over physical training or relaxation training in headache days and headache intensity. Moreover, no serious adverse events associated with acupuncture were reported.
Conclusion	Limited evidence suggested that acupuncture might provide durable post-treatment effects in the management of frequent episodic and chronic TTH for up to 6 months compared with SA, with no severe treatment-related adverse events reported.

1.3. Special Acupuncture Techniques

1.3.1. Comparison of acupuncture techniques

1.3.1.1. Wang 2024

Wang Y, Lu W, Wang Y, Chen W, Zhao H. Efficacy of different acupuncture-related therapies for tension-type headache: a systematic review and network meta-analysis. Front Neurol. 2024 Dec 5;15:1481715. https://doi.org/10.3389/fneur.2024.1481715

Backgound	Tension-type headache (TTH) is among the most common primary headache disorders, characterized by recurrent episodes that are difficult to manage, thus posing a significant public health challenge. Acupuncture, a well-recognized non-pharmacological treatment, is frequently employed for pain management, including TTH. However, the variety of acupuncture techniques and inconsistent treatment outcomes underscore the need for a thorough evaluation. This study aims to update the current evidence on acupuncture and related therapies for TTH, evaluate the efficacy and safety of various acupuncture therapies, and identify the most effective therapeutic strategies, providing valuable guidance for clinical practice.
Methods	We systematically searched randomized controlled trials (RCTs) from four English databases (PubMed, Embase, Cochrane Library, and Web of Science) and four Chinese databases (Wanfang, VIP, CNKI, and SinoMed), including gray literature, up to April 19, 2024. The outcome measures included headache frequency, duration, pain intensity, and responder rate. A Bayesian network meta-analysis was conducted using Stata 17.0 to assess the relative effectiveness and safety of the different acupuncture therapies. This study was registered with the Prospective Register of Systematic Reviews (CRD42024537187).
Results	A total of **42 RCTs, encompassing 4,103 participants** and 21 distinct treatment therapies, were included in the analysis. The network meta-analysis yielded the following findings: (1) regarding responder rate, several acupuncture or combined acupuncture and medication approaches, such as electro-acupuncture (EA) + cupping therapy (CT) [odds ratio (OR) = 28.66, 95% CI: 1.68 to 487.35], manual acupuncture (MA) + bloodletting therapy (BT) (OR = 6.07, 95% CI: 1.81 to 20.29), plum blossom needle tapping (PBNT) (OR = 3.76, 95% CI: 1.04 to 13.65), and scalp acupuncture (SPA) (OR = 3.65, 95% CI: 2.29 to 5.83), were significantly more effective than western medicine (WM) alone, with EA + CT (92.1%) being the most effective. (2) In terms of reducing headache frequency, EA (85.9%) was the most effective, followed by MA + PBNT (80.9%) and MA + WM (78.4%). Compared to WM, both MA + PBNT (SMD = -1.76, 95% CI: -3.31 to -0.22) and EA (SMD = -1.75, 95% CI: -3.30 to -0.20) significantly reduced headache frequency. (3) For shortening headache duration, EA (83.9%) emerged as the most effective treatment, followed by MA + WM (73.5%) and laser acupuncture (LA) (68.5%). (4) In terms of pain intensity reduction, the MA + WM combination (89.4%) was superior to other treatments, with SPA + WM (77.7%) being the next most effective. Compared to herbal medicine (HM), both MA + WM (SMD = -2.37, 95% CI: -4.20 to -0.55) and MA alone (SMD = -1.00, 95% CI: -1.75 to -0.24) significantly alleviated pain intensity.
Conclusion	This comprehensive analysis of 21 acupuncture and related therapies demonstrates that EA is the most effective in reducing headache frequency and shortening headache duration, while EA + CT and MA + WM are the optimal therapies for enhancing responder rate and reducing pain intensity, respectively. However, clinical decisions should be individualized based on the specific needs of each patient.

1.3.1.2. Hu 2023

Hu J, Wang X, Jia S, Kong L, Wang Y, Xin X, Hu Y, Chen X. Acupuncture and related therapies for tension-type headache: a systematic review and network meta-analysis. Front Neurol. 2023 Jun 22;14:1194441. https://doi.org/10.3389/fneur.2023.1194441

Background	Tension-type headache (TTH) is one of the most common primary headaches. Several studies have confirmed the efficacy of acupuncture therapies for TTH, but it is uncertain which treatment is most effective.
Objective	This study aimed to compare the effectiveness and safety of different acupuncture therapies for TTH using Bayesian Network Meta-analysis to provide new ideas for treating TTH.
Methods	Nine databases were searched for randomized controlled trials (RCTs) about different acupuncture therapies for TTH up to December 1, 2022. The outcome indicators analyzed in our study were total effective rate, visual analog scale (VAS), headache frequency, and safety. Pairwise meta-analysis and risk of bias assessment were performed using Review Manager 5.4. Stata 15.0 generated a network evidence plot and detected publication bias. Finally, a Bayesian network meta-analysis of the data was used by RStudio.
Results	The screening process resulted in 30 RCTs that met the inclusion criteria, including 2,722 patients. Most studies failed to report details of trials and were therefore assessed as unclear risks. Two studies were considered high risk because they did not report on all pre-specified outcome indicators or had incomplete data on outcome indicators. The NMA results showed that for total effective rate, bloodletting therapy had the most considerable SUCRA value (0.93156136), for VAS, head acupuncture combined with Western medicine ranked first (SUCRA = 0.89523571), and acupuncture combined with herbal medicine was the most effective in improving headache frequency ($p > 0.05$).
Conclusion	Acupuncture can be used as one of the complementary or alternative therapies for TTH; bloodletting therapy better improves the overall symptoms of TTH, head acupuncture combined with Western medicine is more effective in reducing VAS scores, and acupuncture combined with herbal medicine seems to reduce headache frequency, but the difference is not statistically significant. Overall, acupuncture for TTH is effective with mild side effects, but future high-quality studies are still necessary.

1.3.2. Acupotomy

1.3.2.1. Kwon 2020

Kwon CY, Yoon SH, Chung SY, Kim JW. Clinical Efficacy and Safety of Miniscalpel-Needle Treatment for Tension-Type Headache: A Systematic Review and Meta-Analysis. Chinese Journal of Integrative Medicine. 2020;26(9):713-720. [220317]. doi

Objective	To investigate the clinical efficacy and safety of miniscalpel-needle (MSN) treatment for tension-type headache (TTH).
Method	Seven medical databases were searched to identify randomized controlled trials (RCTs) evaluating the effect and safety of MSN treatment. All articles published up to November 15, 2018 were retrieved. A meta-analysis was conducted for the included studies, and the risk of bias was assessed. Primary outcomes were visual analogue scale (VAS) or numeric rating scale (NRS) score. Secondary outcomes were clinical effective rates including total effective rate (TER), markedly effective rate (MER), and totally cured rate (TCR) determined by improvement in clinical symptoms or VAS scores, the frequency of adverse events (AEs) that occurred during the study, and participant quality of life (QOL).

Results	Seven RCTs involving 724 participants were included. MSN treatment showed significantly higher MER and TCR [relative risk (RR) 1.27, 95% confidence interval (CI) 1.01 to 1.61; RR 1.31, 95% CI 1.09 to 1.57, respectively], but not TER (RR 1.03, 95% CI 0.96 to 1.10) compared to acupuncture. MSN treatment plus conventional treatment showed significant lower VAS and higher TER, MER, and TCR (mean difference -3.54, 95% CI -3.80 to -3.28; RR 1.14, 95% CI 1.06 to 1.23; RR 2.31, 95% CI 1.50 to 3.58; RR 3.01, 95% CI 2.25 to 4.02, respectively) compared to conventional treatment.
Conclusions	According to current evidence, MSN treatment as a monotherapy or as an adjunctive treatment to other existing treatments might have benefits on treating TTH. However, since the number and the sample size of studies included were both small and the methodological quality was poor, the findings of this review should be interpreted with great caution, and our confidence in the results is low. A high quality RCT using objective outcomes should be performed on this topic.

1.3.3. Dry needling

1.3.3.1. France 2014 ∅

France S, Bown J, Nowosilskyj M, Mott M, Rand S, Walters J. Evidence for the use of dry needling and physiotherapy in the management of cervicogenic or tension-type headache: a systematic review. Cephalalgia. 2014;34(12):994-1003. [165848].

Background	There is good evidence in the literature supporting physiotherapy in the management of some forms of headache. Dry needling of myofascial trigger points is becoming an increasingly common approach despite a paucity of research evidence supporting its use. The purpose of this review was to determine the evidence supporting the use of dry needling in addition to conventional physiotherapy in the management of tension-type and cervicogenic headache.
Methods	Ten databases were searched for evidence of the effect of dry needling on the severity and frequency of tension and cervicogenic headache based ICHD classifications.
Results	**Three relevant studies** were identified and all three showed statistically significant improvements following dry needling, but no significant differences between groups. Only one study reported on headache frequency or intensity, reporting a 45 mm improvement in VAS score following the addition of dry needling to conventional physiotherapy. **Two studies showed significant improvements with dry needling over 4-5 weeks of treatment**. No adverse events were reported.
Conclusions	The literature suggests that while **there is insufficient evidence to strongly advocate for the use of dry needling**, it may be a useful addition to conventional physiotherapy in headache management. Further research with a stronger methodological design is required.

2. Overviews of Systematic Reviews

2.1. Huang 2020

Huang J, Shen M, Qin X, Guo W, Li H. Acupuncture for the Treatment of Tension-Type Headache: An Overview of Systematic Reviews. Evid Based Complement Alternat Med. 2020. [207649]. doi

Objectives	Because current evidence regarding the effectiveness of acupuncture for a tension-type headache (TTH) is controversial, we evaluated the reliability of the methodological quality and outcome measures of systematic reviews/meta-analyses (SRs/MAs) on acupuncture for TTH. M
Methods	We conducted a comprehensive literature search for SRs/MAs in major databases from the database's inception to September 2019. The Methodological Quality of Systematic Reviews 2 (AMSTAR-2) and the Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) assessments were used to assess the methodological quality of the included reviews and the quality of evidence, respectively.
Results	Eight reviews were included in the analysis. The AMSTAR-2 assessment results showed that the methodological quality of all included reviews was critically low. Thirty-six outcome measures were included in these reviews. The GRADE results showed that 25 (25/36, 69.4%) outcomes provided low- or very low-quality evidence, four (4/36, 11.1%) provided moderate-quality evidence, and seven (7/36, 19.4%) provided high-quality evidence.
Conclusion	Descriptive analysis results showed that acupuncture treatment for TTH reduced Acupuncture appears to be an effective treatment modality for TTH, but the credibility of the results is limited owing to the generally low methodological quality and evidence quality in the included SRs/MAs.

3. Clinical Practice Guidelines

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

3.1. National Institute for Health and Clinical Excellence (NICE, UK) 2022 ⊕

Headache - tension-type. Clinical Knowledge Summaries (CKS). 2002.
https://cks.nice.org.uk/topics/headache-tension-type/

Advise that a course of 6–10 sessions of acupuncture treatment may be helpful, depending on local referral pathways and availability.

3.2. Japanese Association for the Study of Pain (JASP) Committee for Clinical Practice Guideline for the Management of Chronic Pain (Japan) 2021 ⊕

The Committee for Clinical Practice Guideline for the Management of Chronic Pain. Clinical Practice Guidelines For the Management of Chronic Pain . Tokyo: Publication Department of Medical Books, Shinko Trading Co. Ltd.; 2021 .
https://paincenter.gloomy.jp/paincenter/wp-content/uploads/2022/02/chronicpaintreatmentguide2021e.pdf

CQ N-5-3: Is acupuncture useful for chronic migraine/chronic tension-type headache? **Answer:** Acupuncture may be useful for preventing chronic migraine. Its effects for preventing chronic tension-type headache, however, are not superior to those of physical therapy and relaxation. Recommendation Grade: 2 (weak) – Implementation is weakly recommended.Summary of Overall Evidence: C (low).

3.3. Japanese Society of Neurology, Japanese Headache Society, Japanese

Society of Neurological Therapeutics (Japan) 2021 ⊕

Japanese Society of Neurology. The Japanese Headache Society, Japanese Society of Neurological Therapeutics. Zutsu no Shinryo Gaidorain [Clinical Practice Guidelines For headache, 2021] . Tokyo: Igaku Shoin Ltd.; 2021 [in Japanese]. Cited by 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. *Tension type headache*: Recommendation to use (Weak).

3.4. Australian and New Zealand College of Anaesthetists (ANZA) 2020 ⊕

Acute Pain Management: Scientific Evidence Australian and New Zealand College of Anaesthetists (ANZA). 2020:1317P. [205268] . URL.

Acupuncture may reduce the frequency of tension-type headaches and migraine (U) (Level I [Cochrane Review]); in migraine, it may be better tolerated than pharmacological prophylaxis (N) (Level I [Cochrane Review]).

3.5. Ministry of Public Health of Qatar (MOPH, Qatar) 2020 ⊕

Headache in adults. National Clinical Guidelines . Ministry of Public Health of Qatar (MOPH). 2020;:. [219468]. URL

Tension Type Headache. Acupuncture − consider a course of up to 10 sessions over 5-8 weeks (Level 2, grade A2).

3.6. British Association for the Study of Headache (BASH, UK) 2019 ⊕

Ahmed F, Bahra A, Tyagi A, Weatherby S. National headache management system for adults, 2019. British Association for the Study of Headache; 2019. BASH

Preventive treatments for migraine: Acupuncture, starting dose: 10 treatment sessions

3.7. European Headache Federation (EHF) 2019 ⊕

Steiner TJ, Jensen R, Katsarava Z, Linde M, MacGregor EA, Osipova V, Paemeleire K, Olesen J, Peters M, Martelletti P. Aids to management of headache disorders in primary care (2nd edition) : on behalf of the European Headache Federation and Lifting The Burden: the Global Campaign against Headache. J Headache Pain. 2019;20(1):57. [200002].

Tension Type Headache (TTH): There is limited evidence that acupuncture is effective in reducing intensity and frequency of TTH episodes. While some patients experience benefit, this may be due to placebo effect. Acupuncture has differing forms, and is highly dependent on the skill of the therapist.

3.8. Kaiser Permanente Washington (KPWA , USA) 2018 ⊕

Migraine and Tension Headache Guideline. Kaiser Permanente Washington (KPWA). 2018:21p.

[198815].

Prophylaxis of tension headache : Consider a course of up to 10 sessions of acupuncture over 5–8 weeks for the prophylactic treatment of chronic headaches. For questions about coverage for acupuncture, patients can contact Member Services. A list of preferred complementary alternative medicine (CAM) providers can be found on the KPWA member website (log-in required).

3.9. Duodecim EBM Guidelines (Finland) 2017 ⊕

Version française. Céphalée de tension. Duodecim (EBMFrance.net). 2017. [219375]. https://www.ebmfrance.net/fr/Pages/ebm/ebm00791.aspx

Céphalée de tension chronique : Acupuncture (C)

3.10. Ministry of Public Health of Qatar (MOPH, Qatar) 2017 ⊕

Headache in adults. Clinical Guidelines for the State of Qatar. Ministry of Public Health of Qatar (MOPH). 2017. [221303]. URL

Tension Type Headache. Acupuncture − consider a course of up to 10 sessions over 5-8 weeks (Level 2, grade A2).

3.11. Toward Optimized Practice, Institute of Health Economics (TOP, IHE, Canada) 2016 ⊕

Toward Optimized Practice. Primary Care Management of Headache in Adults. Edmonton (AB): Toward Optimized Practice. 2016. 76P. [168209].

Acupuncture may be considered for patients with frequent tension-type headaches

3.12. Australian and New Zealand College of Anaesthetists (ANZCA, Autralia-New Zealand) 2015 ⊕

Acute Pain Management: Scientific Evidence. Australian and New Zealand College of Anaesthetists. 2015:714P. [196721].

4. Acupuncture may be effective in other acute pain settings (S) (Level I [PRISMA]), including *acute burns* and *back pain* (N) (Level I [PRISMA]), *tension-type headaches* and *migraine* (N) (Level I [Cochrane Review]).

3.13. Japanese Society of Neurology 2013 ⊕

Araki N, Takeshima T, Ando N, Iizuka T, Igarashi H, Ikeda Y, et al. Clinical practice guideline for chronic headache 2013. Neurol Clin Neurosci. 2019;7(5):231-59. [221381]. doi

Recommendation 2.23 ; Despite advances in headache treatment, there remain many patients with chronic headache in whom pharmacotherapy alone is not adequately effective. For the treatment of refractory headache, a multidisciplinary team led by the headache specialists and supported by other health professionals including clinical psychotherapists, physical therapists, occupational therapists, nurses, pharmacists, and **acupuncturists** is essential. Grade A.
Recommendation 3.4.8 Prophylactic therapy for tension-type headache can be broadly divided into pharmacotherapy and nonpharmacotherapy. Pharmacotherapy using mainly antidepressants and nonpharmacotherapies using electromyographic biofeedback therapy, physical therapy, **acupuncture**, exercise therapy (exercise to relax neck and occipital muscles), psychotherapy, and cognitive-behavioral therapy (such as lifestyle guidance) are being conducted. Regarding the treatment duration for pharmacotherapy using mainly antidepressants, assess the outcome after around 3 months (the longest 6 months) and decide whether to continue or discontinue medication. On the other hand, evidence for the treatment duration for nonpharmacotherapies has not been established. Grade A-C.
Recommendation 3.4.9. Nonpharmacotherapies for tension-type headache include psycho-behavioral therapy, physical therapy, **acupuncture**, and Tiger Balm®, and those with proven usefulness warrant recommendation as treatment. Among them, combined use of electromyographic biofeedback (psycho-behavioral therapy) and relaxation training is recommended. Grade A.

3.14. Croatian Society for Neurovascular Disorders, Croatian Medical Association (Croatia) 2012 ⊕

Vuković Cvetković V, Kes VB, Serić V, Solter VV, Demarin V, Janculjak D, Petravić D, Lakusić DM, Hajnsek S, Lusić I, Bielen I, Basić S, Sporis D, Soldo SB, Antoncić I; Croatian Society for Neurovascular Disorders, Croatian Medical Association. Report of the Croatian Society for Neurovascular Disorders, Croatian Medical Association. Evidence based guidelines for treatment of primary headaches–2012 update. Acta Clin Croat. 2012;51(3):323-78. [222897]. URL

Tension type headache: Physical therapy and acupuncture may be valuable options for patients with frequent TTH , but there is no scientific evidence for efficacy. Cochrane review on the use of acupuncture in TTH concludes that it could be a valuable nonpharmacological tool in patients with frequent episodic or chronic TTH.

3.15. Danish Headache Society (DHS, Danemark) 2012 Ø

Bendtsen L, Birk S, Kasch H, Aegidius K, Sørensen PS, Thomsen LL, Poulsen L, Rasmussen MJ, Kruuse C, Jensen R. Reference programme: diagnosis and treatment of headache disorders and facial pain (2nd Edition). J Headache Pain. 2012;13(suppl 1):1-29. [202379].

Tension-type headache: Acupuncture is a frequently used measure. Controlled trials of the effect of acupuncture on tension-type headache have yielded diverging results.

3.16. National Institute for Health and Clinical Excellence (NICE, UK) 2012 ⊕

Headaches in over 12s: diagnosis and management (CG150). Evidence-based recommendations on diagnosing and managing headaches in adults and young people aged 12 years and over. London (UK): National Institute for Health and Clinical Excellence (NICE). 2012.360P. [158980].

Prophylactic treatment 1.3.9 : Consider a course of up to 10 sessions of acupuncture over 5–8 weeks for the prophylactic treatment of chronic tension-type headache. [2012].

3.17. Società Italiana per lo Studio delle Cefalee (SISC, Italia) 2012 ⊕

Sarchielli P, Granella F, Prudenzano MP, Pini LA, Guidetti V, Bono G, Pinessi L, Alessandri M, Antonaci F, Fanciullacci M, Ferrari A, Guazzelli M, Nappi G, Sances G, Sandrini G, Savi L, Tassorelli C, Zanchin G. Italian guidelines for primary headaches: 2012 revised version. J Headache Pain. 2012;13 Suppl 2:S31-70. [202377].

Acupuncture. Tension type headache : Level of evidence (A) Level of recommendation (II)

3.18. Toward Optimized Practice, Institute of Health Economics (TOP, IHE, Canada) 2012 ⊕

Toward Optimized Practice. Guideline for primary care management of headache in adults. Edmonton (AB): Toward Optimized Practice. 2012. 71P. [155937]

Tension type-Headache (TTH). **Do :** Physical therapy and acupuncture may be considered for patients with frequent TTH.

3.19. British Association for the Study of Headache (BASH, GB) 2010 ⊕

BASH. Guidelines for all healthcare professionals in the diagnosis and management of migraine, tension-type headache, cluster headache, medication-overuse headache; British Association for the Study of Headache. 2010;53P. [196913].

The role of acupuncture is unproven but it may be worth trying in the absence of other options. Detection of tender muscle nodules on palpation, with needling aimed at these, is said to offer a good prospect of at least limited success but evidence to support this is poor. As with physiotherapy, symptoms may at fi rst be aggravated by acupuncture. It is sometimes claimed that early exacerbation is prognostic of later improvement.

3.20. European Federation of the Neurological Societies (EFNS, Europe) 2010 ⊕

Bendtsen L, Evers S, Linde M, Mitsikostas DD, Sandrini G, Schoenen J. EFNS guideline on the treatment of tension-type headache - Report of an EFNS task force. European Journal of Neurology 2010;17(11):1318-25. [156105].

Together, the available evidence suggests that acupuncture could be a valuable option for patients suffering from frequent TTH, but more research is needed before final conclusions can be made

3.21. European Headache Federation (EHF) 2007 ⊕

European Headache Federation. European principles of management of common headache disorders in primary care J Headache Pain. 2007;8:S1-47. [169126].

Acupuncture benefits some people with migraine or tension-type headache although large clinical trials have failed to distinguish between acupuncture and sham procedures. It requires skilled and individualised therapy.

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