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# trigeminal neuralgia:

## Névralgie faciale : évaluation de l'acupuncture

### 1. Systematic Reviews and Meta-Analysis

★★★	Evidence for effectiveness and a specific effect of acupuncture
★★	Evidence for effectiveness of acupuncture
★	Limited evidence for effectiveness of acupuncture
Ø	No evidence or insufficient evidence

#### 1.1. Generic Acupuncture

##### 1.1.1. Wei 2024 (versus carbamazepine)

Wei L, Han H, Meng J, Li X, Yao QP. Meta-analysis and sequential analysis of acupuncture compared to carbamazepine in the treatment of trigeminal neuralgia. *World J Clin Cases*. 2024 Aug 6;12(22):5083-5093. <https://doi.org/10.12998/wjcc.v12.i22.5083>

<b>Background</b>	In this randomized controlled trial (RCT) comparing current acupuncture with carbamazepine for trigeminal neuralgia, meta- and sequential analyses were utilized.
<b>Aim</b>	To guide clinical decision making regarding the treatment of trigeminal neuralgia with carbamazepine.
<b>Methods</b>	The RCT literature on needle comparison was searched in various Chinese biomedical databases including Chinese Biomedical Literature Database, Wanfang Data, VIP Database, as well as international databases such as Excerpt Medica Database, Cochrane Library, PubMed, and Web of Science, along with related clinical registration platforms such as World Health Organization International Clinical Trial Registry Platform, ChiCTR, and Clinical Trials up to 1 April 2020. Risk of bias was evaluated using the Cochrane Collaborative Risk Bias tool, primary outcome measures (pain reduction) were analyzed using STATA meta-analysis, outcome measures were analyzed using trial sequential analysis 0.9.5.10 Beta sequential analysis, GRADE was used to assess the evidence, and adverse reactions were documented.
<b>Results</b>	This study analyzed <b>16 RCTs</b> with a total of <b>1231 participants</b> . The meta-analysis revealed a statistically significant difference in pain reduction between acupuncture and carbamazepine [standardized mean difference (SMD) = 1.47; 95% confidence interval (CI): 0.99-1.95], although the quality of evidence was deemed to be of extremely low quality. Cumulative meta-analysis based on the year of publication indicated that carbamazepine treatment first demonstrated a statistically significant difference in pain reduction in 2014 and remained relatively stable over time [SMD = 1.84; 95%CI: 0.22-3.47]. Additionally, the number of adverse events associated with acupuncture was significantly lower compared to carbamazepine.
<b>Conclusion</b>	Acupuncture for trigeminal neuralgia is better than analgesia and safer than carbamazepine; however, firm conclusions still require a high-quality, multicenter, large-sample RCT to confirm these findings.

### 1.1.2. Ang 2023 (versus carbamazepine)

Ang L, Kim HJ, Heo JW, Choi TY, Lee HW, Kim JI, Lee MS. Acupuncture for the treatment of trigeminal neuralgia: A systematic review and meta-analysis. Complement Ther Clin Pract. 2023 Aug;52:101763. <https://doi.org/10.1016/j.ctcp.2023.101763>

<b>Background and purpose</b>	Few systematic reviews have examined the effects of acupuncture on trigeminal neuralgia. This review aims to provide up-to-date evidence on the efficacy of acupuncture for managing pain in patients with trigeminal neuralgia.
<b>Methods</b>	Eleven databases were searched from inception until November 2022 for relevant articles. Two researchers independently conducted study selection, data extraction, and evaluation. The present review solely targeted randomized controlled trials (RCTs). The Cochrane risk of bias assessment tool 2.0 was employed to assess the risk of bias. Data were compiled using RevMan 5.4.1 software, and the quality of the evidence was evaluated using the Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) approach.
<b>Results</b>	<b>Thirty studies involving 2295 patients</b> were included in this review. Compared with carbamazepine, acupuncture led to improvements in pain scores (15 RCTs, mean difference (MD) - 1.40, 95% confidence interval (CI) -1.82 to -0.98 [95% prediction interval, -3.137, 0.343], $p < 0.00001$ , low certainty of evidence (CoE)), response rates (29 RCTs, risk ratio (RR) 1.20, 95% CI 1.15 to 1.25 [95% prediction interval, 1.067, 1.346], $p < 0.00001$ , low CoE), frequency of pain attacks (2 RCTs, MD -2.53, 95% CI -4.11 to -0.96, $P = 0.002$ , low CoE), and adverse effects (13 RCTs, risk difference (RD) -0.15, 95% CI -0.19 to -0.11 [95% prediction interval, -0.193, -0.108], $P < 0.00001$ , very low CoE).
<b>Conclusion</b>	Although the quality of evidence is low, compared with carbamazepine, acupuncture may improve trigeminal neuralgia-related pain. Further rigorously designed studies are warranted to confirm the effects of acupuncture on patients with trigeminal neuralgia.

### 1.1.3. Hu 2019 ☆

Hu H , Chen L , Ma R , Gao H , Fang J. Acupuncture for primary trigeminal neuralgia: A systematic review and PRISMA-compliant meta-analysis. Complement Ther Clin Pract. 2019;:254-267. [192635] .

<b>Background and purpose</b>	Acupuncture is increasingly used by patients with primary trigeminal neuralgia (PTN). We aimed to evaluate the efficacy and safety of acupuncture for PTN.
<b>Methods</b>	Seven databases were searched. Risk of bias was assessed and meta-analyses were conducted. The evidence level was assessed using Grading of Recommendations, Assessment, Development and Evaluation (GRADE).
<b>Results</b>	<b>Thirty-three RCTs</b> were included. Meta-analysis results demonstrated that the effect of both manual acupuncture (MA) and electro-acupuncture (EA) for improving response rate and recurrence rate was more significant than carbamazepine. Besides, MA achieved more significant effect on alleviating pain intensity. Moreover, acupuncture combined with carbamazepine had a more positive effect on response rate than carbamazepine alone.
<b>Conclusions</b>	Acupuncture might have some positive effects for PTN. Nevertheless, the level of all evidence was low or very low. We could not yet draw a firm conclusion on the efficacy of acupuncture for PTN.

### 1.1.4. Zhang 2014 ☆

Zhang Cong. [A Meta-analysis on acupuncture therapy treatment of trigeminal neuralgia curative effect]. Chinese Archives of Traditional Chinese Medicine. 2014;3. [186933].

Objectives	
<b>Methods</b>	Through to July 2005-July 2012 China journal full-text database (CNKI), ten thousand party database, MEDLINE database, Chinese science and technology periodical database (VIP) in relevant literature was electronic retrieval and manual retrieval, into the acupuncture treatment of trigeminal neuralgia and comparison to other therapies of randomized controlled trial (RCT) and clinical control test (CCT), according to Jadad score standard evaluation into the quality of the research project.
<b>Results</b>	A total of <b>15 study standards, a total of 1119 patients</b> , 616 cases of treatment group and control group in 503 cases. Review Manager (Revman 5. 1) statistical software shows that acupuncture to treat trigeminal neuralgia and drug treatment with the total effective rate comparison, statistical significance was found between [merge effect quantity (no4 amongst OR merge = 0. 18), merge effect quantity OR the 95% confidence interal (0. 10, 0. 26), indicating that <b>acupuncture treatment of trigeminal neuralgia effectively</b> . Merge effect amount of test results, $Z = 4. 57$ , $P < 0. 00001$ , shows that between the two groups was statistically significant differences].
<b>Conclusions</b>	

### 1.1.5. Fang 2013 ☆

Fang Li, Chen Qin, Dong Zuo, Luo Pei, Zhang Zuo, Sun Jing, Shen Yafang, Fang Jianqiao. [Systematic review on acupuncture and moxibustion for primary trigeminal neuralgia]. Journal of Zhejiang University of Traditional Chinese Medicine. 2013;12:1433-143. [187029].

<b>Objectives</b>	To have systematic review on the efficacy of acupuncture and moxibustion treatment for primary trigeminal neuralgia.
<b>Methods</b>	RCTs of acupuncture and moxibustion treatment for primary trigeminal neuralgia were searched by computer and manual y. Bias evaluation tool recommended by Cochrane 5. 0. 1 was applied to evaluate the quality of literatures. Software RevMan 5. 1 was used to have Meta-analysis.
<b>Results</b>	<b>15 RCTs with 1255 cases</b> were final y included and analyzed. The combined RR value was 1. 19, CI (1. 13, 1. 25) 95%, test value of synergic efficacy $Z=6. 86$ . There was statistical significance ( $P < 0. 01$ ) on the efficacy between the acupuncture treatment group and control group. The efficacy of acupuncture treatment group was better than the western medicine group.
<b>Conclusions</b>	<b>Acupuncture and moxibustion treatment for primary trigeminal neuralgia was safe and effective</b> , but resulted from strict design, multiple centered and large-sample RCTs were stil required to offer supports

### 1.1.6. Wang 2010 ☆

Wang Jie, Wu Qian-Huai, Wu Jun-Yan. [Meta-analysis of acupuncture treatment for primary trigeminal neuralgia]. China Journal of Traditional Chinese Medicine and. 2010;12:2003-200. [186913].

<b>Objectives</b>	Prospective study of acupuncture treatment for primary trigeminal neuralgia was performed by Meta-analysis, and identified the therapeutic effect and safety of acupuncture on primary trigeminal neuralgia.
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<b>Methods</b>	The Cochrane system evaluation method, RevMan4. 2 software were used to analyze the clinic information that fit the Meta-analysis.
<b>Results</b>	<b>891 Cases and 11 experiments were included</b> , the Merger OR value was 2. 97, confidence interval was 95%, merger effect inspection value was $Z=5. 93$ , $P<0. 01$ , the effect of acupuncture was superior to the control group.
<b>Conclusions</b>	<b>Acupuncture was a safe and effective therapy for primary trigeminal neuralgia</b> , but it needed support of multicenter, large sample, randomized controlled trial

### 1.1.7. Liu 2010 ☆

Liu H, Li H, XU M, Chung KF, Zhang SP. A systematic review on acupuncture for trigeminal neuralgia. Altern Ther Health Med. 2010;16(6):30-5. [156098].

<b>Background</b>	Trigeminal neuralgia (TN) is a commonly seen pain condition with limited treatments available, and acupuncture is widely used for pain conditions, including TN.
<b>Objectives</b>	To review the efficacy of acupuncture treatment for TN.
<b>Methods</b>	English and Chinese databases were searched extensively to identify randomized controlled studies of acupuncture treatment for TN. Selected studies were assessed for methodological quality. Odds ratios (OR) between treatment and control groups were used to assess efficacy.
<b>Results</b>	Twelve studies met the inclusion criteria with 506 people in the acupuncture arm and 414 people in the control arm, in which carbamazepine (CBZ) was used as the control treatment. They were all low-quality studies, hence precluding meta-analysis. Only four trials reported that acupuncture was superior to CBZ, and the remaining eight studies showed no difference between the treatment and control groups. Adverse effects of acupuncture, which were reported in three studies, were mild.
<b>Conclusion</b>	The evidence reviewed previously suggests that acupuncture is of similar efficacy as CBZ but with fewer adverse effects in treatment of TN. However, the evidence is weak because of low methodological quality of the reviewed studies. Further studies with improved methodologies are recommended to support the use of acupuncture for TN.

### 1.1.8. Myers 2002 ☆

Myers CD et al. A review of complementary and alternative medicine use for treating chronic facial pain. J Am Dent Assoc. 2002;133(9):1189-96. [99847].

<b>Background</b>	The authors compiled information on the prevalence of complementary and alternative medicine, or CAM, use, as well as on reports of randomized clinical trials of CAM modalities used to treat chronic facial pain.
<b>Methods</b>	Types of studies reviewed: The authors searched several databases for reports of clinical trials randomizing patients who had facial pain to a CAM intervention or to a control or comparison group. Search terms included "complementary," "alternative," "acupuncture," "biofeedback," "relaxation," "herbal," "meditation," "massage," "yoga," "chiropractic," "homeopathic" and "naturopathic."
<b>Results</b>	Three acupuncture trials, eight biofeedback trials and three relaxation trials met the authors' inclusion criteria. Across studies, results suggested that acupuncture, biofeedback and relaxation were comparable to conservative treatment (for example, an intraoral appliance) and warranted further study. The authors did not locate any randomized clinical trials that tested the effects of homeopathy, naturopathy, chiropractic, massage, meditation, yoga or herbal remedies for chronic facial pain.

<b>Clinical implications</b>	Significant gaps in the scientific knowledge base limit the accuracy with which dental professionals can guide their patients regarding CAM approaches used to treat chronic facial pain.
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## 1.2. Special Acupuncture Techniques

### 1.2.1. Comparison of Acupuncture techniques

#### 1.2.1.1. Yin 2022

Yin Z, Wang F, Sun M, Zhao L, Liang F. Acupuncture Methods for Primary Trigeminal Neuralgia: A Systematic Review and Network Meta-Analysis of Randomized Controlled Trials. Evid Based Complement Alternat Med. 2022 Feb 21;2022:3178154. <https://doi.org/10.1155/2022/3178154>

<b>Background</b>	Primary trigeminal neuralgia (PTN) is a clinical refractory disorder characterized by excruciating pain that severely impacts the quality of life. Several studies have shown that acupuncture can improve PTN pain. However, the comparative efficacy and safety of acupuncture are unknown. Herein, a systematic review was conducted to compare the efficacy and safety of various acupuncture methods for PTN treatment.
<b>Methods</b>	Relevant randomized controlled trials (RCTs) published up to 1 August 2021 were obtained from PubMed, Embase, Cochrane Central Register of Controlled Trials, Web of Science Core Collection, Chinese National Knowledge Infrastructure, Chinese Biomedical Literature Database, CQVIP Database, Wanfang Database, Allied and Alternative Medicine Database, and related registration platforms. Two authors independently selected the studies and obtained data. Cochrane Handbook was used to assess the methodological quality. We put the pain relief as the primary outcome and the response rate and adverse events as the secondary outcomes. Review Manager v5.3, ADDIS v1.16.8, and STATA v15.0 software were used for data analysis. The intraclass correlation coefficient was used to assess the consistency of the two investigators.
<b>Results</b>	A total of <b>58 RCTs with 4,126 participants</b> were obtained. The meta-analysis indicated that five acupuncture methods were superior to conventional medicine (carbamazepine) in pain reduction intensity and response rate. Meanwhile, electronic acupuncture plus manual acupuncture was the most effective therapy since it reduced pain intensity in 11 methods and improved the response rate in 10 interventions. Moreover, six interventions had acceptable adverse events, and none of the included studies reported severe adverse events. However, most pieces of evidence were ranked as critically low.
<b>Conclusion</b>	These findings show that acupuncture methods can be effective and safe for PTN. Moreover, electronic acupuncture plus manual acupuncture maybe the best acupuncture treatment for PTN and should be administered to PTN patients. However, additional well-designed and high-quality RCTs should be conducted to verify the above findings in the future. The systematic review is registered with CRD42020221456.

### 1.2.2. Electroacupuncture

#### 1.2.2.1. Zhou 2017

Zhou Jie, Liang Yi, Chen Qin, Chen Zhen-Yu, Fang Jian-Qiao. [A Meta-analysis of Randomized Controlled Trials of electroacupuncture Treatment for Trigeminal Neuralgia]. Shanghai journal of

Acupuncture or Moxibustion. 2017;36(4):478-483. [181533].

<b>Objective</b>	To systematically assess the efficacy and safety of electroacupuncture for trigeminal neuralgia.
<b>Method</b>	Randomized controlled trials of electroacupuncture treatment for trigeminal neuralgia were sought by a computer search of CNKI, Wan Fang Data, VIP, CBM, PubMed, Embase and The Cochrane Library. The retrieval time limit was from March 1996 to March 2016. Two reviewers sifted the literature and extracted data independently according to the inclusion and exclusion criteria and then assessed the risk of bias of the included literature using the Cochrane risk of bias assessment tool. A meta-analysis was made using RevMan 5.3.
<b>Result</b>	Finally, <b>12 articles</b> were included with a total of <b>847 subjects</b> . The results of meta-analysis showed that the total efficacy rate was higher in the electroacupuncture group than in the control group [OR=4.04, 95%CI(2.67, 6.13), P<0.00001]. There were no statistically significant differences in the VAS score [MD=0.06, 95%CI(0.59, 0.47), P=0.82] and the recurrence rate [OR=0.64, 95%CI(0.05, 7.45), P=0.54] between the electroacupuncture and control groups.
<b>Conclusion</b>	The current limited evidence shows that the total efficacy rate for trigeminal neuralgia is higher in the electroacupuncture group than in the control group. There are no statistically significant differences in the VAS score and the recurrence rate of trigeminal neuralgia between the electroacupuncture and control groups of patients. But the conclusions need more high-quality trials for validation owing to the limitation of the sample size of the included studies.

## 2. Overviews of Systematic Reviews

### 2.1. He 2024

He HX, Li YX, Xiao YS, Fan WH, Xue H. The efficacy of acupuncture for trigeminal neuralgia: an overview of systematic reviews. Front Neurol. 2024 Jul 5;15:1375587.

<https://doi.org/10.3389/fneur.2024.1375587>

<b>Background</b>	Many systematic reviews (SRs) and meta-analysis (MAs) have reported the efficacy of acupuncture treatment for primary trigeminal neuralgia (PTN), but the quality of evidence is unknown and therefore needs to be evaluated comprehensively.
<b>Methods</b>	Eight electronic databases were searched from their inception until January 5, 2024. The methodological quality, reporting quality, and risk of bias of the included SRs were assessed by the assessment of multiple systematic reviews 2 (AMSTAR-2), the Risk of Bias in Systematic Reviews (ROBIS) tool, and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). The quality of evidence for outcome measures was evaluated using the Grading of Recommendations Assessment, Development, and Evaluation (GRADE).
<b>Results</b>	We identified <b>13 SRs/MAs</b> met inclusion criteria. According to the results of the AMSTAR-2, six were rated as critically low quality and seven as low quality. According to ROBIS assessment, 8 SRs/MAs were classified as low risk, and 5 SRs/MAs were found to be high risk. The PRISMA report still has some reporting deficiencies in aspects such as protocol and registration, search strategy, risk of bias, additional analyzes and funding. According to the GRADE system, no high-quality evidence was found, 1 was of moderate quality, 4 were of low quality, and 8 were of critical low quality.

<b>Conclusion</b>	Based on the evidence collected, acupuncture shows promise as a treatment for PTN patients. However, it is important to note that the included SRs/MAs generally have low methodological quality and evidence quality. Therefore, caution must be exercised when interpreting this conclusion. To enhance future research in this area, it is recommended to adequately report methodological details and adhere to guidelines for conducting SRs/MAs.
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## 2.2. Li 2018

Li Yuxi, Li Juan, Zhang Ya, Ye Jing, Yang Han, Xiao Qiwei, Luo Liaojun, Wang Xu, Liang Fanrong. [Overviews of Meta-analysis on Acupuncture for Trigeminal Neuralgia]. Liaoning Journal of Traditional Chinese Medicine. 2018;11:2251-2254. [201763].

<b>Objective</b>	To evaluate the methodological bias and reliability of outcomes in systematic review/Meta-analysis of acupuncture for trigeminal neuralgia.
<b>Methods</b>	A computerized search was performed for collecting overviews of acupuncture for trigeminal neuralgia in domestic and foreign medical database. The relevant data was analyzed by AMSTAR and GRADE system.
<b>Results</b>	A total of <b>9 systematic reviews/Meta-analysis</b> were included, which all had different degrees of bias in methodological quality. The main reasons all studied did not submitted protocols and did not provide a list of excluded documents. The results of GRADE system showed that acupuncture is superior to carbamazepine in treating trigeminal neuralgia, and the quality of the evidence is relatively high.
<b>Conclusion</b>	At present, there were inadequacies in evaluation/Meta-analysis of acupuncture for trigeminal neuralgia. It is necessary to further improve the methodological level and unify the design plan in order to provide higher quality evidence for evidence-based acupuncture.

## 3. Clinical Practice Guidelines

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

### 3.1. 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].

*Trigeminal neuralgia:* A limited number of patients report effect from acupuncture, but there is no scientific evidence to support an effect of such or other non-pharmacological treatment.

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