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Autism Spectrum Disorders

Autisme : évaluation de l'acupuncture

Articles connexes: - conduites thérapeutiques - pathologies - qigong - acupuncture expérimentale -

1. Systematic Reviews and Meta-Analysis

1.1. Generic Acupuncture

1.1.1. Ma 2026

Ma C, Wang Y, Ding Z, Liang X, Yuan M, Liu X, Li Q, Lv H, Qiao N, Zhao Y, Liu X. Comparative Efficacy and Acceptability of Non-pharmacological Therapies and Novel Pharmacotherapies for Autism: A Systematic Review and Network Meta-Analysis. Child Psychiatry Hum Dev. 2026 Jun 12. https://doi.org/10.1007/s10578-026-02040-4

Background	To assess the efficacy and acceptability of non-pharmacological therapies, novel pharmaceuticals, and their combination for autism and explore the preferred treatment options for autism.
Methods	A thorough search was conducted across PubMed, Web of Science, The Cochrane Library, Embase, PsycINFO, China National Knowledge Infrastructure, and Medline databases to identify randomized controlled trials evaluating non-pharmacological or novel pharmacological interventions for autism up to October 2024. Two researchers independently performed study selection, data extraction, and quality assessment. The primary outcome was the severity of core autistic symptoms assessed with validated scales and expressed as standardized mean differences (SMDs). Treatment acceptability was evaluated as a secondary outcome. A frequentist network meta-analysis was performed using Stata 18. A total of 106 RCTs involving 5,986 patients and 21 interventions were included.
Results	Compared with placebo, exercise improved core autistic symptoms (SMD = -1.05, 95% CI: -1.55 to -0.55), as did **acupuncture and moxibustion** (SMD = -0.87, 95% CI: -1.13 to -0.60), transcranial direct current stimulation (tDCS) (SMD = -0.86, 95% CI: -1.58 to -0.13), and bumetanide (SMD = -0.57, 95% CI: -1.12 to -0.01). The cannabinoid group showed lower treatment acceptability than most other interventions.
Conclusion	Exercise, **acupuncture and moxibustion**, non-invasive brain stimulation, and bumetanide may improve the core symptoms of autism and could be considered as alternative or adjunctive treatment options. However, the authors emphasize that additional clinical trials are required before firm conclusions can be drawn.

1.1.2. Lun 2023

Lun T, Lin S, Chen Y, Zhao Y, Wang D, Li L, Yu J. Acupuncture for children with autism spectrum disorder: A systematic review and meta-analysis. Medicine (Baltimore). 2023 Feb 22;102(8):e33079. https://doi.org/10.1097/MD.0000000000033079.

Background	The aim of this study was to assess the efficiency and safety of acupuncture in core symptomatic improvement of children with autism spectrum disorder (ASD).
Methods	We searched the following databases: Cochrane Library, PubMed, Embase, Medline, China National Knowledge Infrastructure (CNKI), Wanfang, Chinese Science and Technology Periodical (VIP) and Chinese Biological Medicine (CBM), from 1 January 2012 to 25 September 2022. The Autism Behavior Checklist (ABC), Childhood Autism Rating Scale (CARS), and Autism Treatment Evaluation Checklist (ATEC) were adopted as outcome indicators. Three reviewers independently assessed the risk of bias (ROB) and the Grading of Recommendations Assessment, Development, and Evaluation (GRADE)assessment. Utilizing Review Manager (RevMan) 5.3 and Stata 12.0, data were analyzed.
Results	A total of **38 trials** were included, and **2862 participants** participated in qualitative synthesis and meta-analysis. Only 1 trial was assessed as having a low ROB, and 37 trials were assessed as having an overall high ROB. The quality of evidence for most indicators were considered very low by the GRADE criteria. The results showed that acupuncture groups might have a higher clinical effective rate than nonacupuncture groups (relative risk [RR] = 1.33,95% confidence interval [CI] = 1.25-1.41; heterogeneity: x2=18.15, P = .64, I2 = 0%). Regarding changes in ABC scores, the acupuncture groups might exhibit greater decrease than nonacupuncture groups (MMD = -6.06, 95%CI = -7.25 to -4.87, P < .00001; heterogeneity: x2 =73.37, P = .03, I2 = 77%). In terms of changes in CARS score, acupuncture group may benefit more than nonacupuncture group (MMD = -3.93, 95%CI = 4.90 to -2.95, P < .00001; heterogeneity: x2=234.47, P < .00001, I2 = 90%). Additionally, in terms of ATEC score, acupuncture groups showed more benefit than nonacupuncture groups (MMD = -10.24, 95%CI = -13.09 to -7.38, P < .00001; heterogeneity: x2=45.74, P = .04, I2 = 85%). Both subgroup analysis and sensitivity analysis are existing heterogeneity. Only 1 RCT study involved adverse events with mild symptoms that did not interfere with treatment and evaluation.
Conclusion	Children with ASD may benefit from acupuncture because of its effectiveness and safety. Nevertheless, given the low quality of the evidence for the assessed outcomes and the high ROB of analyzed trials, the results should be regarded with caution.

1.1.3. Yu 2023

Yu Z, Zhang P, Tao C, Lu L, Tang C. Efficacy of nonpharmacological interventions targeting social function in children and adults with autism spectrum disorder: A systematic review and meta-analysis. PLoS One. 2023 Sep 19;18(9):e0291720. Background and aims: This paper aimed to evaluate the use of nonpharmacological interventions for the management of autism spectrum disorder (ASD). The effects of acupuncture and behavioural therapy, two nonpharmalogical interventions, on social function in ASD patients are still controversial. This meta-analysis investigated the impact of these two treatments and compared their effects.|

Methods	Seven electronic databases were systematically searched to identify randomized controlled trials (RCTs) on the use of acupuncture or behavioural therapy for ASD. A meta-analysis was carried out using Review Manager 5.4 software. Continuous data are reported as mean differences (MDs) or standardized mean differences (SMDs) with 95% confidence intervals (CIs). An assessment of methodological quality using the Cochrane risk-of-bias (ROB) tool for trials was carried out. The Grading of Recommendation Assessment, Development, and Evaluation (GRADE) was applied to evaluate the quality (certainty) of evidence for results regarding social function indicators.

Results	**Thirty RCTs on acupuncture** and 36 on behavioural therapy were included. Compared with the control condition, **body acupuncture (SMD: 0.76, 95% CI: [0.52, 1.01]; low certainty), modern acupuncture technology (SMD: 0.84, 95% CI: [0.32, 1.35]; low certainty)**, cognitive behavioural therapy (SMD: 0.42, 95% CI: [0.26, 0.58]; high certainty), the Denver model (SMD: 0.61, 95% CI: [0.23, 0.99]; moderate certainty) and social skills training (SMD: 0.56, 95% CI: [0.41, 0.71]; moderate certainty) improved social functioning.
Conclusion	Behavioural therapies (such as CBT, the Denver model, social skills training), improved the social functioning of patients with ASD in the short and long term, as supported by high- and moderate-quality evidence. **Acupuncture (including scalp acupuncture, body acupuncture and use of modern acupuncture technology)** also improved social functioning, as supported by low- and very low-quality evidence. More high-quality evidence is needed to confirm the effect of acupoint catgut embedding and Early Intensive Behavioural Intervention (EIBI).

1.1.4. Wang 2021

Wang L, Peng JL, Qiao FQ, Cheng WM, Lin GW, Zhang Y, Gao TG, Sun YY, Tang WZ, Wang P. Clinical Randomized Controlled Study of Acupuncture Treatment on Children with Autism Spectrum Disorder (ASD): A Systematic Review and Meta-Analysis. Evid Based Complement Alternat Med. 2021. [220505]. https://doi.org/10.1155/2021/5549849

Aim	This study aimed to summarize the effectiveness and safety of acupuncture in the treatment of autism spectrum disorder (ASD) through literature analysis and evaluation.
Methods	All studies were retrieved from various databases as follows: English databases, such as PubMed, Cochrane Library, Ovid, and Web of Science, and Chinese databases, such as China National Knowledge Infrastructure (CNKI), WanFang Data (WF), and Technology Periodical Database (VIP). The Cochrane Collaboration's Bias Risk Assessment Scale was used to assess the studies' risk of bias. The effects of acupuncture treatment for ASD were determined using the following indicators: childhood autism rating scale (CARS), autism behavior check list (ABC), Reynell developmental language scale (RDLS), and functional independence measure of children (WeeFIM). The risk map of bias of these studies' quality and the meta-analysis results of the indicators was prepared with RevMan 5.2 software.
Results	Finally, 16 studies were included, five of which were in English and 11 were in Chinese. The **16 studies included 1332 patients**. The CARS results for subgroup analysis were as follows: acupuncture subgroup (MD = -2.65, 95% CI (-3.22, -2.07)) and acupuncture plus massage subgroup (MD = -10.35, 95% CI (-11.34, -9.36)). The ABC results were as follows: (MD = -6.70, 95% CI (-9.10, -4.29)). The analysis results of sensory, relating, language, body and object use, and social/self-help in the subitems of ABC were as follows: sensory (MD = -2.67, 95% CI (-2.90, -2.44)), relating (MD = -3.28, 95% CI (-3.55, -3.02)), language (MD = -2.45, 95% CI (-2.73, -2.16)), body and object use (MD = -1.19, 95% CI (-1.38, -1.00)), and social/self-help (MD = -2.09, 95% CI (-2.30, -1.89)). For the analysis results of comprehension and expression ages in the subitems of RDLS, the comprehension age results were as follows: (MD = 0.08, 95% CI (-0.06, 0.22), P = 0.27). Those of expression age were as follows: (MD = 0.15, 95% CI (0.04, 0.26), P=0.009). The WeeFIM results were as follows: (MD = 3.70, 95% CI (2.38, 5.02)).
Conclusions	This study suggested that acupuncture could effectively treat ASD. However, acupuncture methods and prescriptions at this stage remain heterogeneous, and acupuncture treatment operations require standardization. Studies using rigorous and standard research designs are needed to draw stronger conclusions about the advantages of using acupuncture to treat children and adolescents with ASD.

1.1.5. Ming 2012 ~

Ming X, Chen X, Wang XT, Zhang Z, Kang V, Zimmerman-Bier B. Acupuncture for Treatment of Autism Spectrum Disorders. Evidence-Based Complementary and Alternative Medicine 2012. ID 679845. [166164].

Objectives	There has been lack of reviews of evidence on efficacy,methodology, and/or safety of acupuncture in autism spectrum disorders. This paper examines the emerging evidence of the effects of acupuncture in the treatment of autistic children.
Methods	A literature review was completed viaMedline and three Chinese search engines.
Results	A total of 31 studies were evaluated for acupuncture methodology, study design, treatment effects, and tolerability. The acupoints used, the duration of needling, the frequency of treatment, the choice of stimulation, and the course of the treatment were highly variable amongst the studies. Behavioral and/or developmental improvements were reported in all acupuncture treatment studies. All studies reported general tolerability.Weakness of experimental designs was discussed.
Conclusions	Vigorously controlled double-blinded clinical trials are needed to evaluate the efficacy and safety of acupuncture in children with autism spectrum disorders.

1.1.6. Lee 2012 ☆

Lee MS, Choi TY, Shin BC, Ernst E. Acupuncture for children with autism spectrum disorders: a systematic review of randomized clinical trials. J Autism Dev Disord. 2012. 42(8):1671-83. [168540].

Objectives	This study aimed to assess the effectiveness of acupuncture as a treatment for autism spectrum disorders (ASD).
Methods	We searched the literature using 15 databases.
Results	**Eleven randomized clinical trials** (RCTs) met our inclusion criteria. Most had significant methodological weaknesses. The studies' statistical and clinical heterogeneity preventedus from conducting a meta-analysis. **Two RCTs found that acupuncture plus conventional language therapy was superior to sham acupuncture plus conventional therapy**. Two other RCTs found that acupuncture produced significant effects compared with conventional language therapy or complex interventions. Three RCTs suggested that acupuncture plus conventional therapies had beneficial effects compared with conventional therapy alone. Four more RCTs reported that subjects who received acupuncture experienced significant effects compared with subjects who were waitlisted or received no treatment.
Conclusions	The results of these studies provide **mixed evidence of acupuncture's effectiveness as a treatment for ASD symptoms**.

1.1.7. Cheuk 2011 Ø

Cheuk DK, Wong V, Chen WX.. Acupuncture for autism spectrum disorders (asd). Cochrane Database Syst Rev.. 2011. [160673].

Background	Autism spectrum disorders (ASD) are characterized by impairment in social interaction, impairment in communication and lack of flexibility of thought and behavior. Acupuncture, which involves the use of needles or pressure to specific points on the body, is used widely in Traditional Chinese Medicine and increasingly within a western medical paradigm. It has sometimes been used as a treatment aimed at improving ASD symptoms and outcomes, but its clinical effectiveness and safety has not been rigorously reviewed.
Objectives	To determine the effectiveness of acupuncture for people with ASD in improving core autistic features, as well as communication, cognition, overall functioning and quality of life, and to establish if it has any adverse effects.
Methods	*Search strategy*: We searched the following databases on 30 September 2010: CENTRAL (The Cochrane Library, 2010, Issue 3), MEDLINE (1950 to September 2010 Week 2), EMBASE (1980 to 2010 Week 38), PsycINFO, CINAHL, China Journal Full-text Database, China Master Theses Full-text Database, China Doctor Dissertation Full-text Database, China Proceedings of Conference Database, Index to Taiwan Periodical Literature System, metaRegister of Controlled Trials and the Chinese Clinical Trials Registry. We also searched AMED (26 February 2009) and Dissertation Abstracts International (3 March 2009), but these were no longer available to the authors or editorial base at the date of the most recent search. TCMLARS (Traditional Chinese Medical Literature Analysis and Retrieval System) was last searched on 3 March 2009. *Selection criteria*: We included randomized and quasi-randomized controlled trials. We included studies comparing an acupuncture group with at least one control group that used no treatment, placebo or sham acupuncture treatment in people with ASD. We excluded trials that compared different forms of acupuncture or compared acupuncture with another treatment. *Data collection and analysis*: Two review authors independently extracted trial data and assessed the risk of bias in the trials. We used relative risk (RR) for dichotomous data and mean difference (MD) for continuous data.

Main results	We included **10 trials that involved 390 children with ASD**. The age range was three to 18 years and the treatment duration ranged from four weeks to nine months. The studies were carried out in Hong Kong, mainland China and Egypt. Two trials compared needle acupuncture with sham acupuncture and found no difference in the primary outcome of core autistic features (RFRLRS total score: MD 0.09; 95% CI -0.03 to 0.21, P = 0.16), although results suggested needle acupuncture might be associated with improvement in some aspects of the secondary outcomes of communication and linguistic ability, cognitive function and global functioning. Six trials compared needle acupuncture plus conventional treatment with conventional treatment alone. The trials used different primary outcome measures and most could not demonstrate effectiveness of acupuncture in improving core autistic features in general, though **one trial reported patients in the acupuncture group were more likely to have improvement on the Autism Behavior Checklist** (RR 1.53; 95% CI 1.09 to 2.16, P = 0.02) and had **slightly better post-treatment total scores** (MD -5.53; 95% CI -10.76 to -0.31, P = 0.04). There was no evidence that acupuncture was effective for the secondary outcome of communication and linguistic ability, though there seemed to be some benefit for the secondary outcomes of cognitive function and global functioning. Two trials compared acupressure plus conventional treatment with conventional treatment alone and did not report on the primary outcome. Individual study results suggested there may be some benefit from acupressure for certain aspects of the secondary outcomes of communication and linguistic ability, cognitive function and global functioning. Four trials reported some adverse effects, though there was little quantitative information, and at times both intervention and control groups experienced them. Adverse effects noted included bleeding, crying due to fear or pain, irritability, sleep disturbance and increased hyperactivity. None of the trials reported on quality of life. There are a number of problems with the evidence base: the trials were few in number and included only children; six of the trials were at high risk of bias; they were heterogeneous in terms of participants and intervention; they were of short duration and follow-up; they reported inconsistent and imprecise results, and, due to carrying out large numbers of analyses, they were at risk of false positivity.
Authors' conclusions	**Current evidence does not support the use of acupuncture for treatment of ASD**. There is no conclusive evidence that acupuncture is effective for treatment of ASD in children and no RCTs have been carried out with adults. Further high quality trials of larger size and longer follow-up are needed.

1.1.8. Rossignol 2009~

Rossignol DA. Novel and Emerging Treatments for Autism Spectrum Disorders: A Systematic Review. Ann Clin Psychiatry. 2009;21(4):213-36. [155203].

Objectives	Currently, only one medication (risperidone) is FDA-approved for the treatment of autism spectrum disorders (ASD). Perhaps for this reason, the use of novel, unconventional, and off-label treatments for ASD is common, with up to 74% of children with ASD using these treatments; however, treating physicians are often unaware of this usage.

Methods	A systematic literature search of electronic scientific databases was performed to identify studies of novel and emerging treatments for ASD, including nutritional supplements, diets, medications, and nonbiological treatments. A grade of recommendation (“Grade”) was then assigned to each treatment using a validated evidence-based guideline as outlined in this review: A: Supported by at least 2 prospective randomized controlled trials (RCTs) or 1 systematic review. B: Supported by at least 1 prospective RCT or 2 nonrandomized controlled trials. C: Supported by at least 1 nonrandomized controlled trial or 2 case series. D: Troublingly inconsistent or inconclusive studies or studies reporting no improvements. Potential adverse effects for each treatment were also reviewed.
Results	Grade A treatments for ASD include melatonin, acetylcholinesterase inhibitors, naltrexone, and music therapy. Grade B treatments include carnitine, tetrahydrobiopterin, vitamin C, alpha-2 adrenergic agonists, hyperbaric oxygen treatment, immunomodulation and anti-inflammatory treatments, oxytocin, and vision therapy. Grade C treatments for ASD include carnosine, multivitamin/mineral complex, piracetam, polyunsaturated fatty acids, vitamin B6/magnesium, elimination diets, chelation, cyproheptadine, famotidine, glutamate antagonists, **acupuncture**, auditory integration training, massage, and neurofeedback.
Conclusions	The reviewed treatments for ASD are commonly used, and some are supported by prospective RCTs. Promising treatments include melatonin, antioxidants, acetylcholinesterase inhibitors, naltrexone, and music therapy. All of the reviewed treatments are currently considered off-label for ASD (ie, not FDA-approved) and some have adverse effects. Further studies exploring these treatments are needed. Physicians treating children with an ASD should make it standard practice to inquire about each child's possible use of these types of treatments.

1.2. Special Acupuncture Techniques

1.2.1. Scalp Acupuncture

1.2.1.1. Zhao 2025

Li-Na Zhao, Xiao-Gang DU, Hu-Jie Song, Ning-Xia Zhao, Bo-Xia Li, Ting Li. Meta-analysis of efficacy and safety of scalp acupuncture in the treatment of autism spectrum disorder. Zhen Ci Yan Jiu. 2025 Nov 25;50(11):1352-1364. https://doi.org/10.13702/j.1000-0607.20241299

Background	Objectives: To assess the efficacy and safety of scalp acupuncture in the treatment of autism spectrum disorder (ASD).
Methods	A comprehensive search was conducted using PubMed, EMbase, The Cochrane Library, Web of Science, SinoMed, China National Knowledge Internet, China Science and Technology Journal Database, and Wanfang Data databases. The Cochrane Handbook of Systematic Reviews 5.1.0 was used to evaluate the risk of bias in the included randomized control trials (RCTs). A Meta-analysis was performed using RevMan 5.4.1 statistical software.

Results	A total of **33 RCTs were included, including 2 701 patients** with ASD. Meta-analysis results showed that compared with the rehabilitation training group, the scalp acupuncture combined with rehabilitation training could significantly reduce the autism behavior rating scale score [MD= -5.70, 95% CI (-6.51, -4.89), P<0.01], and childhood autism rating scale score [MD= -4.02, 95% CI (-4.38, -3.66), P<0.01], and improve the Gesell developmental diagnostic scale-social adaptative developmental quotient [MD=5.90, 95% CI (4.29, 7.51), P<0.01], Gesell-language development quotient [MD=4.39, 95% CI (3.03, 5.75), P<0.01], Gesell-personal social competence [MD=4.32, 95% CI (2.48, 6.15), P<0.01], psychoeducational assessment for children 3rd edition (PEP-3)-communication skills score [MD=3.76, 95% CI (3.25, 4.27), P<0.01], PEP-3-physical agility score [MD=1.99, 95% CI (1.40, 2.59), P<0.01], and PEP-3-behavior score [MD=2.18, 95% CI (1.77, 2.59), P<0.01].
Conclusion	Scalp acupuncture is effective in improving the language problems, behavior problems, social adaptation and other symptoms of autism children, and has high safety. However, due to the insufficient quality of the research methods included in the literature, the integration of subjects with different severity and age, and the wide variation in the duration of the intervention, the conclusion of this study still needs to be validated by more rigorous and high-quality randomized controlled trials, with long-term follow up.

1.2.1.2. Liu 2019

Liu C , Li T, Wang Z, Zhou R, Zhuang L. Scalp acupuncture treatment for children's autism spectrum disorders: A systematic review and meta-analysis. Medicine (Baltimore). 2019;98(13). [196428].

Background	Autism spectrum disorder (ASD) is a neurodevelopment disorder without definitive cure. Previous studies have provided evidences for efficacy and safety of scalp acupuncture in children with ASD. However, the efficacy of scalp acupuncture treatment (SAT) in children with ASD has not been evaluated systematically. The objective of this study is to evaluate the efficacy of SAT in children with ASD.
Methods	Information from 6 databases, including MEDLINE, EMBASE, Cochrane database, AMED, China National Knowledge Infrastructure, and Wanfang Data, were retrieved from the inception of each database from 1980 through September 2018. Randomized controlled trials evaluating the efficacy of SAT for patients with ASD were included. The primary outcome measures were the Childhood Autism Rating Scale (CARS) and Autism Behavior Checklist (ABC). The secondary outcome measures were Psychoeducational Profile (Third Edition) (PEP-3) scores. Risk of bias assessment and data synthesis were conducted with Review Manager 5.3 software. Methodological quality was assessed with the Cochrane risk of bias tool.
Results	**Fourteen trials with 968 participants** were conducted and 11 of the trials were suitable for meta-analysis. Compared with behavioral and educational interventions, SAT significantly decreased the overall CARS scores for children under 3 years old (mean difference (MD) = 3.08, 95% confidence interval (CI) [-3.96, -2.19], P < .001) and above 3 years old (MD = 5.29, 95% CI [-8.53, -2.06], P < .001), ABC scores (MD = 4.70, 95% CI [-6.94, -2.79], P < .001). Furthermore, SAT significantly improved PEP-3 scores in communication (MD = 3.61, 95% CI [2.85, 4.37], P < .001), physical ability (MD = 2.00, 95% CI [1.16, 2.84], P < .001), and behavior (MD = 2.76, 95% CI [1.80, 2.71], P < .001).
Conclusion	SAT may be an effective treatment for children with ASD. Given the heterogeneity and number of participants, randomized controlled trials of high quality and design are required before widespread application of this therapy.

1.2.2. Laser Acupuncture

1.2.2.1. Dong 2026

Dong D, Xu L, Thompson-Hodgetts S, Jou H, Vohra S. Efficacy and Safety of Laser Acupuncture in the Treatment of Children With Autism Spectrum Disorder: A Systematic Review. Glob Adv Integr Med Health. 2026;15:27536130261487432. https://doi.org/10.1177/27536130261487432

Background	Preliminary evidence suggests acupuncture may be helpful for pediatric autism; however, needles may be a source of healthcare trauma, so non-needle options should be prioritized. To conduct a systematic review (SR) to synthesize the current evidence on the efficacy and safety of laser acupuncture for pediatric autism.
Methods	We searched the following databases from inception until Nov 14, 2024: MEDLINE, CINAHL, EMBASE, Scopus, PsycINFO, Cochrane Library, SinoMed and China National Knowledge Infrastructure and J-Stage. Randomised controlled trials of laser acupuncture on children up to age 18 years of age with ASD were included. Outcomes were autism symptoms, adverse effects and language development indicators. The PRISMA-A checklist was used to guide conduct and reporting.
Results	A total of **two trials (n=76)** were included. The quality of evidence for most indicators were considered low to very low by GRADE criteria. Meta-analysis was not possible due to heterogeneity in populations and outcomes. Results suggest acupuncture groups benefited compared to no treatment. There were no adverse effects reported by parents of the participants in either trial.
Conclusion	Two studies indicate benefits of laser acupuncture in children with autism but given the low quality of evidence, results should be regarded with caution. Additional well conducted randomized controlled trials with larger sample sizes are required to build evidence.

2. Overview of systematic reviews

2.1. Meng 2023

Meng XR, Cao X, Sun ML, Deng H, He LY, Liu J. [Re-evaluation of systematic reviews of acupuncture and moxibustion for childhood autism]. Zhongguo Zhen Jiu. 2023 Feb 12;43(2):223-31. Chinese. https://doi.org/10.13703/j.0255-2930.20220526-k0002.

Objective	To re-evaluate the systematic review/Meta-analysis of acupuncture and moxibustion for childhood autism (CA), aiming to provide decision-making basis for clinical diagnosis and treatment.
Methods	The systematic review and/or Meta-analysis of acupuncture and moxibustion for CA were searched in PubMed, EMbase, Cochrane Library, SinoMed, CNKI and Wanfang databases. The retrieval time was from the database establishment to May 5th, 2022. PRISMA (preferred reporting items for systematic reviews and Meta-analyses) was used to evaluate the report quality, and AMSTAR 2 (a measurement tool to assess systematic reviews 2) was used to evaluate the methodological quality, bubble map was used to construct the evidence map and GRADE was used to evaluate the quality of evidence.

Results	A total of **9 systematic reviews** were included. The PRISMA scores ranged from 13 to 26. The report quality was low, and there was a serious lack in the aspects of program and registration, search, other analysis and funding. The main problems in methodology included not making prespecified protocol, incomplete retrieval strategy, not providing a list of excluded literatures, and incomplete explanation on heterogeneity analysis and bias risk. The evidence map showed that 6 conclusions were valid, 2 conclusions were possible valid and 1 conclusion was uncertain valid. The overall quality of evidence was low, and the main factors leading to the downgrade were limitations, followed by inconsistency, imprecision and publication bias.
Conclusion	Acupuncture and moxibustion has a certain effect for CA, but the quality of reporting, methodology and evidence in included literature need to be improved. It is suggested to perform high-quality and standardized research in the future to provide evidence-based basis.

2.2. Zhang 2023

Zhang L, Huang C, Chen X, Du S, Yang J, Hu B. The efficacy of acupuncture for attention deficit hyperactivity disorder (ADHD): An overview of systematic reviews and meta-analyses. Complement Ther Med. 2023 Sep;76:102968. https://doi.org/10.1016/j.ctim.2023.102968

Background	Attention deficit hyperactivity disorder (ADHD) is one of the most common neurological and mental developmental disorders in children. Published systematic reviews (SRs) and meta-analyses (MAs) concerning the use of acupuncture for ADHD have compared the efficacy of acupuncture treatment to that of drug therapies. However, the quality of these articles has not been evaluated and the evidence varies widely.
Objective	To summarize and assess the efficacy of acupuncture for ADHD based on existing SRs and MAs.
Methods	A systematic search of the literature was conducted from inception until September 16 2021, using seven electronic databases. The AMSTAR-2 tool was used to evaluate the quality of SRs and MAs, and the GRADE system was used to assess the quality of evidence.
Results	There are a total of **five SRs and Mas** included in this overview. Using the AMSTAR-2, three articles were rated as having 'Low' quality, while two were rated as having of 'Critically Low' quality. The GRADE system was used to measure the quality of evidence for ten outcomes (five response rate outcomes, three Conners' Index of Hyperactivity (CIH) score outcomes, one Conners' rating scale score outcome, and one Chinese medicine syndrome outcome) across the five included MAs. Four of the ten outcomes demonstrated 'moderate' quality, four demonstrated 'low' quality, and two demonstrated 'very low' quality. The risk of bias and inconsistency accounted for most downgrading factors in the included reviews.
Conclusion	It is still debatable whether acupuncture is efficacious in improving the CIH score and the Response rate. Considering the heterogeneity of clinical trials and the fact that this study did not search and evaluate the relevant data of each randomized controlled trial, large-sample and high-quality randomized controlled trials are still needed to draw reliable conclusions regarding acupuncture's role in treating ADHD. Due to the poor quality of existing available evidence, little inference can be drawn from the included studies.

3. Clinical Practice Guidelines

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

3.1. Academy of Medicine, Singapore (AMS), Ministry of Health (MOH), Singapore 2024 Ø

Wong CM, Aljunied M, Chan DKL, Cheong JMY, Chew B, Chin CH, Choo SHT, Chua AHL, Foo MTS, Goh TJ, Khader M, Khoo SKM, Koh HC, Lian WB, Lim HH, Poon KK, Sim ZL, Sung M, Tan PC, Yong S, Zhang G, Aishworiya R. 2023 clinical practice guidelines on autism spectrum disorder in children and adolescents in Singapore. Ann Acad Med Singap. 2024 Apr 29;53(4):541-552. https://doi.org/10.47102/annals-acadmedsg.2023307

CAM therapies that are not recommended as treatment for core symptoms of autism include **acupuncture**, amino acid supplementation, animal-assisted interventions, art therapy, auditory integration therapy, camel milk, coenzyme Q10, dance movement therapy, digestive enzymes, folinic acid, gluten-free casein-free (GFCF) diet, ketogenic diet, mesalazine, mindfulness intervention, minerals including zinc, magnesium and iron, neurofeedback, omega-3 fatty acids, probiotics, qigong massage or other types of massage, secretin, sulforaphane, transcranial direct current stimulation and vitamins including B12 and B6.

3.2. Scottish Intercollegiate Guidelines Network (SIGN, Scotland) 2016 Ø

Assessment, diagnosis and interventions for autism spectrum disorders. Scottish Intercollegiate Guidelines Network (SIGN). 2016:83P. [196059].

Systematic reviews of complementary therapies, acupuncture and animal-assisted interventions reported that evidence for the use of complementary and alternative therapies for individuals with ASD is sparse and no strong conclusions could be drawn.

3.3. Malaysia Health Technology Assessment Section (MaHTAS, Malaysia) 2014 Ø

Malaysia Health Technology Assessment Section (MaHTAS). Management of Autism Spectrum Disorder in Children and Adolescents. Ministry of Health (MoH). 2014:76P. [172323]. URL

Traditional and Complementary Medicine could not be recommended to children with autism spectrum disorder because of insufficient evidence and potential harmful effects [Acupuncture].

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