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Nocturnal Enuresis:

Enurésie : évaluation de l'acupuncture

1. Systematic Reviews and Meta-Analysis

1.1. Generic acupuncture

1.1.1. Saettini 2016

Saettini F, Marra C, Rota M, Liu XQ, Bower WF. Acupuncture for the treatment of pediatric nocturnal enuresis: A systematic review and a meta-analysis of randomized and non-randomized studies. European Journal of Integrative Medicine. 2016;8(2):89-97. [207278]. doi

Introduction	Nocturnal enuresis is a common clinical condition in the pediatric population. The aim of this study was to assess the effectiveness of acupuncture treatment on pediatric nocturnal enuresis.
Methods	The search of publications using “acupuncture” and “enuresis” or “bedwetting” as keywords was performed in 6 databases. To be included studies had to (1) compare acupuncture with conventional treatment or placebo; (2) investigate a pediatric sample; and (3) provide results at the end of treatment or follow-up. Languages included were English; Italian; and Chinese. Analysis was performed according to PRISMA guidelines. Primary outcome was reduction in wet nights. Side effects and dropouts were secondary outcomes.
Results	We included **10 studies** (7 randomized controlled trials and 3 non-randomized controlled trials) covering a total of **888 patients**. A favorable, but non significant, effect of acupuncture compared with conventional care and placebo emerged. The type of acupuncture was the main source of heterogeneity. No statistically significant differences emerged across non-randomized and randomized studies. No difference was found in dropouts. Side effects in the acupuncture group were minor but rarely reported.
Conclusions	Acupuncture seems to be an effective option for the treatment of nocturnal enuresis, though further large randomized trials are needed because no statistically significance emerged and low quality of the included studies might have overestimated results. Acupuncture treatment seems feasible and with minor side effects.

1.1.2. Kiddoo 2015

Kiddoo D. Nocturnal enuresis: non-pharmacological treatments. BMJ Clin Evid. 2015. [177796].

Introduction	Nocturnal enuresis affects 15% to 20% of 5-year-old children, 5% of 10-year-old children, and 1% to 2% of people aged 15 years and older. Without treatment, 15% of affected children will become dry each year. Nocturnal enuresis is not diagnosed in children younger than 5 years, and treatment may be inappropriate for children younger than 7 years.

Methods and outcomes	We conducted a systematic review and aimed to answer the following clinical question: What are the effects of non-pharmacological interventions for relief of symptoms of nocturnal enuresis? We searched: Medline, Embase, The Cochrane Library, and other important databases up to October 2013 (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), the European Medicines Agency (EMA), and the UK Medicines and Healthcare products Regulatory Agency (MHRA).
Results	We found five 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**, dry bed training, enuresis alarm, and hypnotherapy.

1.1.3. Wei 2013

Wei Su-Zhen, Zheng Fang-Jiang. [A meta-analysis of acupuncture combined with traditional Chinese medicine in the treatment of nocturnal enuresis in children]. Chinese Journal of Healthy Birth & Child Care. 2013;2:78-81. [186945].

Objective	To analyze the clinical effects of acupuncture combined with traditional Chinese medicine in the treatment of children with nocturnal enuresis.
Methods	All domestic medical journals from medical database between 1980 to 2012 were retrieved to select randomized controlled trials about acupuncture and/or traditional Chinese medicine in the treatment of children with nocturnal enuresis, which were extracted and cross checked by two independent evaluators. RevMan 4. 2 software was used for analysis of the quality of these researches in accordance with the Cochrane Handbook 5. 0 standards.
Results	**Seven randomized controlled trials with a total of 509 patients were included**. Meta-analysis shows that traditional Chinese medicine combined with acupuncture in the treatment of nocturnal enuresis children has certain clinical advantages.
Conclusion	More randomized controlled trials with large sample and good quality are needed to further prove the clinical effects of traditional Chinese medicine combined with acupuncture on children with nocturnal enuresis.

1.1.4. Kiddoo 2011

Kiddoo D. nocturnal enuresis. Bmj Clin Evid. 2011 [156301].

Introduction	Nocturnal enuresis affects 15% to 20% of 5-year-old children, 5% of 10-year-old children, and 1% to 2% of people aged 15 years and over. Without treatment, 15% of affected children will become dry each year. Nocturnal enuresis is not diagnosed in children younger than 5 years, and treatment may be inappropriate for children younger than 7 years.
Methods and outcomes	We conducted a systematic review and aimed to answer the following clinical question: What are the effects of interventions for relief of symptoms? We searched: Medline, Embase, The Cochrane Library, and other important databases up to February 2010 (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 19 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**, anticholinergics (oxybutynin, tolterodine, hyoscyamine), desmopressin, dry bed training, enuresis alarm, hypnotherapy, standard home alarm clock, and tricyclics (imipramine, desipramine).

1.1.5. Huang 2011 ☆

Huang T, Shu X, Huang YS, Cheuk DK. Complementary and miscellaneous interventions for nocturnal enuresis in children. Cochrane Database Syst Rev. 2011 Dec 7;12. [188074]

Objectifs	Nocturnal enuresis (bedwetting) is a socially disruptive and stressful condition which affects around 15% to 20% of five year olds, and up to 2% of young adults. To assess the effects of complementary interventions and others such as surgery or diet on nocturnal enuresis in children, and to compare them with other interventions.
Méthodes	SEARCH METHODS: We searched PubMed (1950 to June 2010), EMBASE (1980 to June 2010), the Traditional Chinese Medical Literature Analysis and Retrieval System (TCMLARS) (1984 to June 2010), Chinese Biomedical Literature Database (CBM) (1975 to June 2010), China National Knowledge Infrastructure (CNKI) (1979 to June 2010), VIP database (1989 to June 2010), and the reference lists of relevant articles, all last searched 26 June 2010. No language restriction was used. SELECTION CRITERIA: All randomised or quasi-randomised trials of complementary and other miscellaneous interventions for nocturnal enuresis in children were included except those focused solely on daytime wetting. Comparison interventions could include no treatment, placebo or sham treatment, alarms, simple behavioural treatment, desmopressin, imipramine and miscellaneous other drugs and interventions. DATA COLLECTION AND ANALYSIS: Two reviewers independently assessed the quality of the eligible trials, and extracted data.
Résultats	24 randomised controlled trials, 2334 children were studied, of whom 1283 received a complementary intervention. The quality of the trials was poor: 5 trials were quasi-randomised, 5 showed differences at baseline and 17 lacked follow up data.The outcome was better after hypnosis than imipramine in one trial (relative risk (RR) for failure or relapse after stopping treatment 0.42, 95% confidence interval (CI) 0.23 to 0.78). Psychotherapy appeared to be better in terms of fewer children failing or relapsing than both alarm (RR 0.28, 95% CI 0.09 to 0.85) and rewards (RR 0.29, 95%CI 0.09 to 0.90) but this depended on data from only one trial. Medicinal herbs had better results than desmopressin in one trial (RR for failure or relapse after stopping treatment 0.35, 95% CI 0.14 to 0.85). **Acupuncture had better results than sham control acupuncture (RR for failure or relapse after stopping treatment 0.67, 95% CI 0.48 to 0.94) in a further trial**. Active chiropractic adjustment had better results than sham adjustment (RR for failure to improve 0.76, 95% CI 0.60 to 0.95). However, each of these findings came from small single trials, and must be verified in further trials. The findings for diet and faradization were unreliable, and there were no trials including homeopathy or surgery.
Conclusions	There was weak evidence to support the use of hypnosis, psychotherapy, acupuncture, chiropractic and medicinal herbs but it was provided in each case by single small trials, some of dubious methodological rigour. Robust randomised trials are required with efficacy, cost-effectiveness and adverse effects clearly reported.

1.1.6. Kiddoo 2007

Kiddoo D. Nocturnal enuresis. BMJ Clin Evid. 2007. [187895].

Introduction	Nocturnal enuresis affects 15-20% of 5-year-old children, 5% of 10 year-old-children and 1-2% of people aged 15 years and over. Without treatment, 15% of affected children will become dry each year. Nocturnal enuresis is not diagnosed in children younger than 5 years, and treatment may be inappropriate for children younger than 7 years.
Methods and outcomes	We conducted a systematic review and aimed to answer the following clinical question: What are the effects of interventions for relief of symptoms? 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 14 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**, anticholinergics (oxybutynin, tolterodine, hyoscyamine), desmopression, dry bed training, enuresis alarm, hypnotherapy, standard home alarm clock, tricyclics (imipramine, desipramine).

1.1.7. Bowers 2005

Bower WF, Diao M, Tang JL, Yeung CK. Acupuncture for nocturnal enuresis in children: a systematic review and exploration of rationale. Neurourol Urodyn. 2005;24(3):267-72. [136538]..

Objectives	This review identified reports of acupuncture for childhood nocturnal enuresis, with the aim of ascertaining whether acupuncture is efficacious and or better than standard therapy for treating enuresis.
materials and methods	Studies of children of either gender <18 years of age who received acupuncture treatment for nocturnal enuresis, were considered. The primary outcome measure was change in the mean number of wet episodes following treatment. Electronic searching was supplemented by hand searching of western medicine and traditional Chinese medicine (TCM) journals along with English language alternative medicine journals. Trials were assessed for quality and sources of bias. Meta-analysis was performed and the overall weighted odds ratio (OR) and associated 95% confidence interval (CI) were computed using the fixed effect model; the Forest plot was used to demonstrate results.
Results	Two hundred six abstracts were identified, of which 11 studies were eligible for data extraction. All the trials were of low methodological quality. There was some evidence that acupuncture is useful for nocturnal enuresis when used in conjunction with other treatment that may also include a different form of acupuncture (OR 3.98, CI: 2.2-7.2). When one form of acupuncture is compared with another there was marked heterogeneity, implying that some forms of acupuncture are effective.
Conclusion	This review provides tentative evidence for the efficacy of acupuncture for the treatment of childhood nocturnal enuresis. Due to the low methodological quality of studies, evidence to identify, which parameters of acupuncture work best, is lacking. More rigorous trials are clearly warranted.

1.1.8. Glazener 2005

Glazener C, Evans J, Cheuk D. Complementary and miscellaneous interventions for nocturnal enuresis in children. Cochrane Database Syst Rev. 2005. (2):CD005230. [136182].

Background	Nocturnal enuresis (bedwetting) is a socially disruptive and stressful condition which affects around 15 to 20% of five year olds, and up to 2% of young adults. Objectives: To assess the effects of complementary interventions and others such as surgery or diet on nocturnal enuresis in children, and to compare them with other interventions.
Methods	Search Strategy: We searched the Cochrane Incontinence Group Specialised Register (searched 22 November 2004), the Traditional Chinese Medical Literature Analysis and Retrieval System (TCMLARS) (January 1984 to June 2004) and the reference lists of relevant articles. Selection criteria: All randomised or quasi-randomised trials of complementary and other miscellaneous interventions for nocturnal enuresis in children were included except those focused solely on daytime wetting. Comparison interventions could include no treatment, placebo or sham treatment, alarms, simple behavioural treatment, desmopressin, imipramine and miscellaneous other drugs and interventions. Data collection and analysis: Two reviewers independently assessed the quality of the eligible trials, and extracted data.
Main results	In 15 randomised controlled trials, 1389 children were studied, of whom 703 received a complementary intervention. The quality of the trials was poor: four trials were quasi-randomised, five showed differences at baseline and ten lacked follow up data.The outcome was better after hypnosis than imipramine in one trial (relative risk (RR) for failure or relapse after stopping treatment 0.42, 95% confidence interval (CI) 0.23 to 0.78). Psychotherapy appeared to be better in terms of fewer children failing or relapsing than both alarm (RR 0.28, 95% CI 0.09 to 0.85) and rewards (0.29, 95% 0.09 to 0.90) but this depended on data from only one trial. Acupuncture had better results than sham control acupuncture (RR for failure or relapse after stopping treatment 0.67, 95% CI 0.48 to 0.94) in a further trial. Active chiropractic adjustment had better results than sham adjustment (RR for failure or relapse after stopping treatment 0.74, 95% CI 0.60 to 0.91). However, each of these findings came from small single trials, and need to be verified in further trials. The findings for diet and faradization were unreliable, and there were no trials including homeopathy or surgery.
Authors' conclusions	There was weak evidence to support the use of hypnosis, psychotherapy, acupuncture and chiropractic but it was provided in each case by single small trials, some of dubious methodological rigour. Robust randomised trials are required with efficacy, cost-effectiveness and adverse effects carefully monitored.

1.2. Special Acupuncture techiques

1.2.1. Comparison of acupuncture techniques

1.2.1.1. Kannan 2022

Kannan P, Bello UM. The efficacy of different forms of acupuncture for the treatment of nocturnal enuresis in children: A systematic review and meta-analysis. Explore (NY). 2022 Jul-Aug;18(4):488-497. https://doi.org/10.1016/j.explore.2021.11.008

Background	The efficacy of different forms of acupuncture for the treatment of nocturnal enuresis in children is not known.

Objective	To determine the efficacy of different forms of acupuncture, such as manual acupuncture, laser/electroacupuncture, acupoint injection, and moxibustion, for the treatment of nocturnal enuresis.
Methods	A literature search was conducted on Medline, EMBASE, Web of Science, CINAHL, PubMed, Physiotherapy Evidence Database, and Scopus from database inception to September 2020. The Cochrane risk of bias tool was utilised to evaluate the risk of bias in each included study. The quality of the evidence was evaluated using the Grading of Recommendations, Assessment, Development, and Evaluation tool.
Results	**Thirteen trials (n = 890)** were included. Meta-analyses revealed significantly greater numbers of children reporting improved nocturnal enuresis in the moxibustion (p = 0.004), acupoint injection (p = 0.020), and laser acupuncture (p = 0.001) groups than in the control groups. Meta-analyses showed no significant differences in the numbers of children reporting the complete cure of nocturnal enuresis between laser acupuncture and desmopressin (p = 0.57).
Conclusions	The review identified moxibustion, acupoint injections, and laser acupuncture as effective treatments for nocturnal enuresis in children. However, the evidence for these interventions is limited and of very-low-grade quality. The effects of laser acupuncture compared with desmopressin remain inconclusive.

1.2.2. Laser acupuncture

1.2.2.1. Ton 2022

Ton G, Lin CH, Ho WC, Lai WY, Yen HR, Lee YC. The Effects of Laser Acupuncture Therapy on Nocturnal Enuresis: A Systematic Review and Meta-Analysis. Med Acupunct. 2022 Aug 1;34(4):228-239. https://doi.org/10.1089/acu.2022.0002

Introduction	Nocturnal enuresis (NE), often known as bedwetting, is a common condition in children and, as a result, they may have subsequent social impairments. The aim of this study was to evaluate the efficacy of low-level laser therapy (LLLT) in children with NE.
Methods	International databases with laser- and NE-related keywords were searched, and only randomized controlled trials (RCTs) that used any type of LLLT to treat NE and compared it with any type of control intervention were included. **Eleven studies** using laser acupuncture therapy (LAT), involving **927 participants**, were included for a systematic review. A meta-analysis was conducted using full and partial response-rate variables. The analysis was performed using Preferred Reporting Items for Systematic reviews and Meta-Analyses guidelines, and the Cochrane risk-of-bias tool and Grading of Recommendations Assessment Development and Evaluation recommendations for quality of evidence were used to rate all included publications.
Results	The LAT groups showed significant improvement, compared with control groups when full response rates were analyzed. There was no significant difference between the groups treated with LAT and the groups who underwent medication therapy alone when full response rates were analyzed. Red and infrared wavelengths and continuous waves were the most commonly used LAT modalities, and lower abdomen and back acupoints were the most-common sites.
Conclusions	LAT seems to be an effective and safe treatment for NE; however, the quality of evidence available in the literature was relatively low. More-rigorous and higher-quality trials are needed to investigate this treatment modality further.

2. Clinical Practice Guidelines

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

2.1. European Association of Urology (EAU) 2026 ⊕

Radmayr C, Bogaert G, Bijons A, Burgu B, Castagnetti M, Hoen LA, et al. EAU Guidelines on Paediatric Urology. Arnhem (NL): European Association of Urology; 2026. https://d56bochluxqnz.cloudfront.net/documents/full-guideline/EAU-Guidelines-on-Paediatric-Urology-2026.pdf

A Cochrane review showed no benefit for treatments such as hypnosis, psychotherapy, acupuncture, chiropractic and medicinal herbs for the treatment of NE [785]. Newer studies, however, contribute potential merit to the acupuncture practice [786, 787].

Supporting References:

- 785- Huang T, Shu X, Huang YS, Cheuk DK. Complementary and miscellaneous interventions for nocturnal enuresis in children. Cochrane Database Syst Rev. 2011 Dec 7;2011(12):CD005230. https://doi.org/10.1002/14651858.cd005230.pub2
- 786- Botla AM, Mustafa JH, Abd-Elmonem AM, Sayed MD, Shehata MMA. Effect of laser acupuncture on monosymptomatic nocturnal enuresis in adolescent females: A randomized controlled trial. Physiother Res Int. 2024 Jan;29(1):e2048. https://doi.org/10.1002/pri.2048
- 787- Kannan P, Bello UM. The efficacy of different forms of acupuncture for the treatment of nocturnal enuresis in children: A systematic review and meta-analysis. Explore (NY). 2022 Jul-Aug;18(4):488-497. https://doi.org/10.1016/j.explore.2021.11.008

2.2. German Society for Child and Adolescent Psychiatry, Psychosomatic Medicine and Psychotherapy e.V. (DGKJP) German Society for Child and Adolescent Medicine e.V. (DGKJ) 2020 Ø

Leitlinie S2k Enuresis und nicht-organische (funktionelle) Harninkontinenz bei Kindern und Jugendlichen Update 2021. https://www.awmf.org/uploads/tx_szleitlinien/028-026l_S2k_Enuresis-und-nicht-organische-funktionelle-Harninkontinenz_2021-12.pdf

Non-behavioral psychotherapeutic methods (such as psychodynamic psychotherapy, hypnotherapy) are not effective with the therapy goal of nocturnal contine and are also not recommended. There is also no indication for manual therapy or **acupuncture** (Nunes 2010, Huang 2011).

2.3. European Association of Urology (EAU) 2019 Ø

Paediatric Urology. Monosymptomatic nocturnal enuresis - bedwetting. European Association of Urology (EAU). 2019.[196850]

Although the several forms of neuromodulation and acupuncture have been investigated for nocturnal enuresis treatment, the present literature data precludes its use because of its inefficiency, or at least no additional benefit.

2.4. Duodecim EBM Guidelines (Finland) 2017 Ø

Version française (EBMFrance.net). Énurésie chez l'enfant. 2017. [219386].
https://www.ebmfrance.net/fr/Pages/ebm/ebm00633.aspx

Il convient de ne pas traiter l'énurésie nocturne par la punition, la fermeté excessive, l'homéopathie, **l'acupuncture**, les traitements localisés, l'hypnose, la psychothérapie ou la restriction hydrique. Aucune de ces solutions ne donnent de meilleurs résultats que le placebo.

2.5. National Institute for Health and Clinical Excellence (NICE, UK) 2010 Ø

Bedwetting in under 19s (CG111). Evidence-based recommendations on the assessment, care and treatment of young people (under 19) with bedwetting (nocturnal enuresis). London (UK): National Institute for Health and Clinical Excellence (NICE). 2010;:473P. [160866].

4.4 *Complementary therapies* What is the effectiveness of complementary therapies (acupuncture and hypnotherapy) for reducing the number of wet beds and improving self-esteem in children and young people who wet the bed, when they are used independently or in conjunction with conventional treatments? Why this is important Many families consider the use of complementary and/or alternative medicine (CAM) as a treatment option when conventional treatment 'fails' or in order to avoid drug or other treatments. There is very little evidence about the efficacy of many CAM treatments, but the use of CAM is widespread and increasing across the developed world. There is a clear need for more effective guidance for health professionals, so that they can give evidence-based advice to patients about what does and does not work and what is and is not safe, and for the public. Research should: Use randomised controlled trials to test the effect of using CAM therapies in addition to or instead of other treatments for bedwetting. Clearly describe the CAM therapies tested, including the provision of the treatment for both the treatment and the control group. Priority should be given to research on acupuncture and hypnotherapy but other CAM therapies should not be excluded.

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