

Acupuncture for obesity: a systematic review and meta-analysis

Cho S H, Lee J S, Thabane L, Lee J

Options

Print

PDF

Set alert

Fast track

PubMed record

Original research

Share

|

**You need to be logged in
to see your keywords**

CRD summary

This review concluded that acupuncture for obesity had some beneficial effect compared to placebo or lifestyle control. However, results were of limited value due to clinical heterogeneity and poor methodological quality of included trials. This was a well-conducted review and the authors' conclusions are appropriately cautious.

Authors' objectives

To evaluate the efficacy of various types of acupuncture therapy for reducing body weight and to describe the frequency and types of adverse events or adverse reactions of acupuncture.

Searching

The following databases were searched to March 2008 with no language restrictions; MEDLINE, EMBASE, Cochrane Central Register of Controlled Trials, AMED (Allied and Complementary Medicine Database), CINAHL, PsycINFO and several Korean, Japanese and Chinese medical databases (listed in the report). Clinical trial databases were also searched, including Current Controlled Trials, the National Centre for Complementary and Alternative Medicine, National Institutes of Health, and the Complementary and Alternative Medicine Specialist Library at the NHS National Library for Health. Authors of included trials were contacted for any unpublished data. Search terms used were reported.

Study selection

Randomised controlled trials (RCTs) that compared acupuncture with a control to assess the efficacy on weight loss were eligible for inclusion. Participants of any age were required to be defined as overweight or obese (according to body mass index cut-off points, or percentage excess weight). Pregnant women and patients with serious medical conditions were excluded.

Included trials were required to evaluate any forms of acupuncture were eligible for inclusion; specifically classical acupuncture, laser acupuncture, acupressure, auricular acupuncture, auricular acupressure, auricular electroacupuncture and acupoint. Studies that assessed different forms of acupuncture to each other, or assessed the combined effect of acupuncture with other therapies were excluded. Controls were required to be placebo, no treatment, pharmacological or non pharmacological interventions (e.g. diet and exercise).

The majority of included trials were conducted in China. Participants ranged in age from 16 to 62 years. In the included trials, follow-up ranged from 4 to 12 weeks.

The primary outcome was change in weight or change in body mass index. Secondary outcomes included frequency of adverse events and other mild effects.

The authors did not state how the papers were selected for the review, or how many reviewers performed the selection.

Assessment of study quality

Methodological quality was assessed by two independent reviewers using the Jadad scale, a 5-point scale evaluating randomisation, blinding and intention-to-treat. Studies were considered high quality if they scored ≥ 3 . Disagreements were resolved by consensus.

Data extraction

Two independent reviewers extracted mean difference and relative risk into standard data extraction forms and disagreements were resolved by consensus. Authors of included trials were contacted to provide further information where necessary.

Methods of synthesis

Pooled mean differences and corresponding 95% confidence intervals (CIs) were calculated for changes in body weight or in body mass index (BMI) and the pooled relative risk and corresponding 95% CIs were calculated for remission of obesity as a measure of improvement in weight loss. A fixed-effect model was used where statistical heterogeneity was not observed. Statistical heterogeneity was assessed using a χ^2 test and the I^2 test where 50% was considered substantial heterogeneity. Subgroup analyses were conducted based on type of acupuncture. Publication bias was assessed using funnel plots.

Results of the review

Thirty-one randomised controlled trials (RCTs) were included in the review ($n=3,013$ participants). Of these, two RCTs did not provide sufficient information to be included in meta-analyses. Methodological quality of trials varied; 20 RCTs scored 1 on the Jadad scale, the lowest score possible. Six RCTs scored 2 and five RCTs scored 3 or higher.

Acupuncture compared to lifestyle controls: Acupuncture significantly reduced average body weight compared to lifestyle controls (weighted mean difference 1.72 kg, 95% confidence interval (CI): 0.50 to 2.93; $p=0.006$, five RCTs) and combined with diet, significantly improved weight loss compared to diet alone (relative risk 2.57 kg, 95% CI: 1.98 to 3.34; $p<0.00001$, five RCTs). Subgroup analyses were inconsistent across the different outcome measures used. Statistical heterogeneity and publication bias were not observed for most outcomes, however, when acupuncture was combined with diet, funnel plots suggested a lack of smaller sized studies.

Acupuncture compared to placebo or sham treatments: Compared to placebo or sham treatments, acupuncture significantly reduced average body weight (weighted mean difference 1.56 kg, 95% CI: 0.74 to 2.38; $p=0.0002$, three RCTs). No heterogeneity was observed. Weight loss was also significantly improved in patients receiving acupuncture (mean difference 3.66, 95% CI: 3.05 to 4.27; one RCT) and

also patients receiving both acupuncture and auricular acupressure (relative risk 17.0, 95% CI: 2.49 to 115.86; one RCT) compared to wait-list control

Acupuncture compare to medication: Acupuncture showed more improved outcomes for body weight (WMD 1.90 kg, 95% CI: 1.67 to 2.13; $p=0.0002$, two RCTs) and for weight loss (relative risk 1.13 kg, 95% CI: 1.04 to 1.22; $p<0.00001$, four RCTs) than conventional medication. No statistical heterogeneity was observed.

Acupuncture compared to other treatments: Compared to other treatments, acupuncture was significantly beneficial compared to herbal tea, herbal supplements and transcutaneous electrical nerve stimulation treatment. No significant differences were reported between acupuncture and ultrasound stimulation therapy.

Adverse events: Among trials reporting adverse events, four RCTs reported minimal adverse events and two RCTs reported no adverse events. Redness, pain or discomfort, bleeding in ears, dry mouth, headaches, sleepiness, hypertension and dizziness were reported.

Authors' conclusions

Acupuncture for obesity had some beneficial effect compared to placebo or lifestyle control, but results were of limited value due to clinical heterogeneity and poor methodological quality of the included trials. More research and well-designed, rigorous clinical trials are needed.

CRD commentary

This review addressed a clear question supported by appropriate inclusion criteria. The search was very comprehensive and did not place restrictions on language. However, there appeared to be limited efforts to retrieve unpublished data. Suitable methods were used throughout the review process to minimise the risks of reviewer error and bias. Detailed evidence tables were reported. The quality of included trials was very poor; the authors noted this and reported the likely over-estimated efficacy. Results were pooled using meta-analysis. Heterogeneity was assessed using appropriate methods. Subgroup analyses were attempted, but as the authors reported, the number of trials was so small that any conclusions from these additional analyses were limited.

In terms of methodology, this review was carried out robustly. The authors' conclusions are appropriately cautious given the poor quality of included trials, the small number of included studies and limited evidence available.

Implications of the review for practice and research

Practice: The authors stated that because acupuncture therapy is relatively safe, patients who want to try it should not be discouraged.

Research: High quality trials are needed to assess the effectiveness of acupuncture for treating obesity.

Funding

Not stated

Bibliographic details

Cho S H, Lee J S, Thabane L, Lee J. Acupuncture for obesity: a systematic review and meta-analysis. International Journal of Obesity 2009; 33(2): 183-196

PubMedID

[19139756](#)

Original Paper URL

<http://www.nature.com/ijo/journal/v33/n2/pdf/ijo2008269a.pdf>

Indexing Status

Subject indexing assigned by CRD

MeSH

Acupuncture Therapy; Humans; Obesity; Weight Loss

AccessionNumber

12009103114

Database entry date

29/07/2009

Record Status

This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.