Acupuncture Therapy for Chronic Pain

Clinical Guidelines

The 2017 Clinical Guidelines of the American College of Physicians recommend that for acute, subacute and chronic low back pain, clinicians and patients should select nonpharmacologic treatments as a first line of care with acupuncture therapy included as one option.


The US Department of Health and Human Services Agency for Healthcare Quality and Research (AHRQ) found for chronic low back pain, effective therapies versus placebo, sham, no treatment, usual care, or wait list included acupuncture therapy.


The National Institutes of Health (NIH) National Center for Complementary and Integrative Health (NCCIH) reviewed evidence-based approaches for pain management and recommended acupuncture and yoga for low back pain; and acupuncture and Tai chi for knee osteoarthritis


Systematic Reviews with Meta-Analysis Acupuncture for Chronic Pain Conditions:
Headache, neck, shoulder, back, knee pain

A systematic review with meta-analysis involving nearly 18,000 patients using acupuncture therapy for musculoskeletal pain related to the neck and low back, osteoarthritis of the knee, and headache and migraine, found acupuncture was significantly better than both sham acupuncture and usual care for all conditions.


A cost effectiveness analysis of nonpharmacologic treatments for knee OA found acupuncture to be one of the more clinically effective therapies and cost effective at the UK National Institute for Health and Care Excellence (NICE) QALY thresholds.


In a 2016 meta-analysis of 29 trials (n=17,922) using acupuncture for musculoskeletal pain (low back, neck and shoulder), osteoarthritis of the knee and headache/migraine found 90% of benefit persisted at 12 months in trials using wait list or usual care as control; trials comparing acupuncture to sham saw a 50% of effect persistence at 12 months.

The effects of a course of acupuncture treatment for patients with chronic pain persist significantly following care.


In a 2014 review and meta-analysis, acupuncture for nonspecific musculoskeletal pain, osteoarthritis, chronic headache, or shoulder pain is associated with improved pain outcomes compared with sham-acupuncture and no-

Arya Nielsen, PhD
Consortium Pain Task Force Evidence Group
acupuncture control, with response rates of approximately 30% for no acupuncture, 42.5% for sham acupuncture (where sham was not inactive control), and 50% for acupuncture.


A systematic review with meta-analysis also confirms auricular treatment, acupuncture or pressure by way of seed or magnetic spheres fixed at ear-points with tape, is effective for acute and chronic pain management.


A 2012 individual patient data meta-analysis of acupuncture for four chronic pain conditions: back and neck pain, osteoarthritis, chronic headache, and shoulder pain found acupuncture is effective beyond placebo effect and is a reasonable referral options.


**Knee OA specific**

A 2016 meta-analysis of 10 RCTs (n=2007) of acupuncture for chronic knee osteoarthritis demonstrates that acupuncture can improve short-term (up to 13 weeks following treatment) and long-term physical function (up to 26 weeks), and provides short-term pain relief in patients with chronic knee pain due to osteoarthritis compared to controls of sham treatment usual care or no intervention.


**Headache, migraine**

Two updated Cochrane systematic reviews found acupuncture to be effective in the treatment and prevention of tension-type headache and in migraine prophylaxis. From a purely comparative effectiveness perspective the evidence from clinical trials and meta-analyses makes a compelling case in support of a potentially important role for acupuncture as part of a treatment plan for patients with migraine, tension-type headache, and several different types of chronic headache disorders.


Coeytaux RR, Befus D. Role of Acupuncture in the Treatment or Prevention of Migraine, Tension-Type Headache, or Chronic Headache Disorders. *Headache*. 2016;56(7):1238-1240.

**Neck pain**

An updated systematic review of acupuncture for neck disorders published by Cochrane has been withdrawn to incorporate comments.


A 2007 systematic review of 10 trials found moderate evidence that acupuncture was more effective than sham control immediately post treatment, and more effective that inactive sham immediately post treatment and at short term follow up; limited evidence acupuncture was more effective than massage at short term follow up. And there was moderate evidence that acupuncture was more effective than a wait-list control at short term follow-up.


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In a multi-center trial of 14,161 patients with chronic neck pain randomized to acupuncture group (1880), no acupuncture (1886) or if refusing randomization, acupuncture care (10,395); 15 sessions over 3 months. Treatment with acupuncture added to routine care in patients with chronic neck pain was associated with improvements in neck pain and disability maintained through 6 months compared to treatment with routine care alone.


In a trial of 3,451 subjects with chronic neck pain duration (>6 months) found benefit from acupuncture compared to controls. There were increased costs associated with the addition of acupuncture care but with health benefit lasting beyond the three-month study duration, per international cost-effectiveness threshold values, the authors found acupuncture to be a cost-effective treatment strategy in patients with chronic neck pain.


**Temporomandibular disorders**

Nine trials qualified for meta-analysis (n=231) found acupuncture therapy to be superior to sham nonpenetrating acupuncture and sham laser therapy when measured by the VAS of pain and muscle tenderness.


**Shoulder pain specific**

Randomized trials (12; n=1012) that evaluated the effects of acupuncture with rehabilitation for poststroke shoulder pain compared to rehabilitation alone were reviewed with meta-analysis. Acupuncture combined with rehabilitation treatment appeared to be more effective than rehabilitation treatment alone for poststroke shoulder pain, with authors calling for more research for conclusive evidence.


A 2012 systematic review of 7 RCTs found acupuncture combined with exercise was effective for shoulder pain following stroke.


Patients (n=117) with subacromial impingement syndrome (SIS) were treated with corticosteroid injection or acupuncture (30 minute sessions twice weekly for 5 weeks) with home exercises. Treatments were equally beneficial in reducing pain and improving shoulder function, with global impression of change in favor of acupuncture group at 6 months but equivalent at 12 months.


**Hip pain**

In a randomized trial (n=3,633), patients with chronic pain due to OA of the knee (2,627) or the hip (n=926) who were treated with acupuncture in addition to routine care showed significant improvements in symptoms and quality of life (34.5% responded with equal or > 50% reduction in WOMAC index) compared with patients who received routine care alone Benefits were only slightly reduced at 6 months (3 months after completion of study).


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In a RCT of (n=45) patients with osteoarthritis of the hip were randomized to patient education alone, electro-acupuncture (EA) with patient education or hydrotherapy with patient education. EA and hydrotherapy, both in combination with patient education, induce long-lasting effects, shown by reduced pain and ache and by increased functional activity and quality of life.


In a RCT (n=32) patients with hip OA were randomized to receive either acupuncture (6 weekly sessions) or advice and exercises for their hip, 6 weekly sessions; acupuncture was found to be more effective in symptomatic treatment of hip OA with benefit persisting at 8-week follow-up.


**Peripheral Neuropathy**

A review on the management of *peripheral neuropathy induced by chemotherapy* found acupuncture among therapies that may be useful for PN, but not electroacupuncture.


In a systematic review with meta-analysis (15 trials) showed benefit for acupuncture over control in the treatment of diabetic neuropathy, Bell’s palsy, and carpal tunnel syndrome. Acupuncture is probably effective in the treatment of HIV-related neuropathy, and there is insufficient evidence for its benefits in idiopathic neuropathy.


**Curious sustained and long term benefits of acupuncture treatment for pain**

**Carpal tunnel syndrome and neuroplasticity**

In a trial of eligible patients with carpal tunnel syndrome (n=80), patients received either i) verum electro-acupuncture 'local' to the more affected hand; (ii) verum electro-acupuncture at 'distal' body sites, near the ankle contralesional to the more affected hand; and (iii) local sham electro-acupuncture using non-penetrating placebo needles. Acupuncture therapy was provided for 16 sessions over 8 weeks. Verum acupuncture is associated with measurable physiological improvements in pain centers in the brain and nerves not shown with sham acupuncture. Improvement in brain measures predicted greater relief three months’ post treatment that was not seen with sham treatment. The longitude of benefit is confirmed over equal pain relief in the short term from sham treatment of carpal tunnel syndrome, wrist pain.


**Long-term cardiac benefit from acupuncture treatment of fibromyalgia**

A large trial performing a 1 to 1 propensity score match of 58,899 patients who received acupuncture for fibromyalgia to 58,899 who did not have acupuncture found the cumulative incidence of coronary heart disease (CHD) was significantly lower in the acupuncture cohort independent of age, sex, comorbidities or statins used.


Arya Nielsen, PhD

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