British Acupuncture Council

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Neck pain (2019)

Key points

- Neck pain is very common (NICE 2018) and is a major cause of disability worldwide (Haldeman, 2018; Kim 2018; World Health Organization 2016)
- Several systematic reviews of trials of acupuncture or cupping therapy have found them effective in reducing the intensity of neck pain (Cagnie 2015; Yuan 2015; Kim 2018; Seo 2017)
- Studies have shown that the benefits of acupuncture for neck pain may be maintained up to 12 months after treatment (Cerzo-Tellez 2016; MacPherson 2015)
- No serious adverse effects have been reported in systematic reviews or trials of acupuncture or cupping for the management of neck pain (Yuan 2015; Kim 2018; Ho 2017; Cerzo-Tellez 2016)
- Acupuncture is cost-effective when added to routine care for neck-pain associated disorders (van der Velde 2017)
- Acupuncture is effective, well-tolerated, and cost-effective for treating chronic neck pain when performed by well-trained healthcare professionals (Yin 2017; Cagnie 2015; Yuan 2015; Kim 2018; Ho 2017; Seo 2017; Cerzo-Tellez 2016; MacPherson 2015; van der Velde 2017)

The burden of neck pain

Neck pain can be associated with symptoms that radiate to the arms or head, and may involve one or several neurovascular and musculoskeletal structures such as nerves, nerve roots, intervertebral joints, discs, bones, muscles and ligaments. The majority of neck pain is considered non-specific, which means that it is not caused by a specific pathology such as a tumour or fracture (Yuan 2015). Neck pain is very common and may become a chronic condition (NICE 2018). It is a major cause of disability worldwide (Haldeman, 2018; Kim 2018; World Health Organization 2016) and can result in economic hardship as it can affect a person's ability to work and directly increase medical costs (Ho 2017; Haldeman 2018; Kim 2018; Allen 2018). Paracetamol and non-steroidal anti-inflammatory drugs (NSAIDs) are common pharmacological treatments (Kim 2018). Side effects may be more common when these drugs are used long-term for chronic neck pain (Kim 2018). For NSAIDs, there may be gastrointestinal-related adverse events and an increased risk of serious cardiovascular and renal complications (Fine 2013); also paracetamol is not necessarily a safe option (Roberts 2016). Many people, including those who have had no improvement with medication, are interested in complementary and alternative medicine such as acupuncture or cupping therapy to help manage pain (Seo 2017). There is mounting evidence to support acupuncture being a good choice in the management of acute and chronic pain (Yin 2017; Coutaux 2017).

Systematic reviews

Several systematic reviews of trials investigating the effectiveness of acupuncture or cupping therapy for neck pain have been conducted, and the majority found that acupuncture results in reductions in the intensity of neck pain (Cagnie 2015; Yuan 2015; Kim 2018; Seo 2017).

A systematic review comparing ischemic compression with acupuncture found that there was strong evidence for acupuncture having a positive effect on pain intensity (Cagnie 2015). There was also moderate evidence that acupuncture increased the side-bending range of motion, with similar effects to those seen with a lidocaine injection (Cagnie 2015).

Another systematic review of trials on the efficacy of acupuncture and electroacupuncture in patients with chronic neck pain revealed that there were no significant differences in pain in patients receiving acupuncture compared with those receiving conventional treatment such as physical therapy or medication. The improvements were also similar between the groups in terms of disability and quality of life measures. The addition of acupuncture to conventional treatment led to improvements in pain relief (Seo 2017).

There was moderate evidence from one review that acupuncture was significantly more effective than sham-acupuncture in reducing neck pain immediately post-treatment or at 1-month term (p=0.01) (Yuan 2015). By contrast, in comparison to sham needling where the skin was penetrated, the Neck Pain Task Force did not find acupuncture effective for the management of recent or persistent neck (Wong 2016). They suggested this sort of sham may have caused a physiological effect and called for more studies with non-penetrating sham or placebo interventions. Indeed, the fact that sham acupuncture is not an inert placebo, raises serious concerns about the value of such trials in general (MacPherson 2014).

Cupping has been shown to be significantly more effective than no intervention at reducing neck pain ($p < 0.001$) (Yuan 2015; Kim 2018). When compared with active controls, it was found to reduce pain (p=0.00009), improve functional impairment (p=0.05) and the physical aspect of quality of life (p=0.001) (Kim 2018). The authors of this systematic review noted that the quality of evidence was low to very low, but concluded nevertheless that cupping may be an effective treatment for patients with neck pain compared with no treatment or active controls (Kim 2018).

Individual randomised controlled trials

A large randomised controlled trial (RCT) involving 517 patients with chronic neck pain compared the efficacy of 12 acupuncture treatments or 20 Alexander Technique lessons, given in addition to usual care, with usual care alone. The median duration of neck pain in patients in this study was 6 years. At 12 months after the treatment, acupuncture sessions and Alexander Technique lessons both led to significant, clinically relevant reductions in neck pain ($p<0.001$) and associated disability compared with usual care (MacPherson 2015).

Long-term benefits were also seen in a RCT of 128 people with chronic non-specific neck pain (>6 months duration) (Cerzo-Tellez 2016), acupuncture resulted in significant and clinically relevant improvements in neck pain and range of motion compared with those completing stretching exercises only. These effects were evident after four acupuncture sessions and continued to be significant six months later.

There is strong support for the long-term benefits of acupuncture more widely in chronic pain. Results from a high quality meta-analysis on almost 18,000 patients with back, neck and shoulder pain, osteoarthritis and migraine or headache suggested that approximately 90% of the improvements seen with acupuncture compared to controls would be sustained to 12 months (MacPherson 2017). Such long-term effects may be due to signal changes in the areas of the brain associated with pain-related memory and learning, i.e. neuroplasticity (Coutaux 2017).

In another recent RCT of people with neck pain, those receiving six abdominal acupuncture treatments (n=77) had significantly greater improvements in neck pain disability compared with those receiving non-penetrating sham acupuncture (n=77) at week 6 ($p<.001$). This difference was even more significant at week 14 (Ho 2017).

Adverse events

No serious adverse effects have been reported in systematic reviews or trials of acupuncture or cupping for the management of neck pain (Yuan 2015; Kim 2018; Ho 2017; Cerzo-Tellez 2016).

No serious adverse events were observed in the acupuncture or sham acupuncture groups in a RCT of 154 people with neck pain. Over the 924 treatment sessions provided during the trial, 11 patients developed transient bruises at the site of needle insertion on one occasion each, which required no medical intervention (Ho 2017).

No adverse events were reported in a RCT of 128 people with chronic non-specific neck pain (>6 months duration) comparing acupuncture with passive stretching (Cerzo-Tellez 2016).

Cost effectiveness of acupuncture for neck pain

The cost-effectiveness of several types of treatment for whiplash and neck pain-associated disorders (NAD) in children and adults was assessed with a systematic review of health economic data. For adults with NAD, acupuncture added to routine medical care was identified as one of the key cost-effective interventions (van der Velde 2017). This finding supports an earlier important systematic review by the Task Force on Neck Pain which found that acupuncture, in combination with routine multimodal medical care was found to be cost-effective (van der Velde 2017; Willich 2006).

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