



## Research digest

There are around four million acupuncture treatments per year in the UK, of which around half are delivered by members of the British Acupuncture Council. Musculoskeletal pain is the most common condition that patients present with, but traditional acupuncturists see people with a wide range of conditions; mental ill health and infertility are the next most prevalent (Hopton 2012): <https://www.ncbi.nlm.nih.gov/pubmed/22240649>

### General

#### **'National health survey finds acupuncture patients have high rates of satisfaction exceeding national averages'**

This report from the US, based on massive numbers, shows that acupuncture patients are very satisfied with their treatment and find it highly effective in improving their main health problems. 89,000 acupuncture patients treated in 2014 and 2015 within a managed care network filled out the standard questionnaire. These results were released by American Specialty Health Incorporated (ASH), a company that develops and maintains managed plans for specialised care services such as acupuncture, chiropractic, massage therapy, naturopathy, and physical therapy. Between 85 and 93 per cent of those surveyed said their acupuncturist was successful in addressing their primary health issue: <http://files.clickdimensions.com/ashcompaniescom-a7oce/files/acupuncturecahps.pdf>

### Chronic pain

#### **Acupuncture for Chronic Pain: Update of an Individual Patient Data Meta-Analysis (Vickers 2018)**

A landmark paper in 2012 demonstrated that, based on the largest dataset of high quality randomised trials, acupuncture was significantly superior both to usual care and sham, for patients with chronic headache, back/neck pain and osteoarthritis. This was where it was first properly confirmed that acupuncture was not just acting as a rather good placebo. In this update the dataset now amounts to 39 trials and over 20,000 patients. New analysis shows in addition that the acupuncture effects largely persist after the end of the treatment course: only about 15 per cent is lost after 12 months. (Note: a consistent criticism by NICE has been that there was no evidence of longer-term effects. This is now seen not to be the case and patients can be reassured that the benefits are unlikely to disappear as soon as they stop treatment): <https://www.ncbi.nlm.nih.gov/pubmed/29198932>

A UK version of this can be found on the website of the NHS's research arm, as they funded some of the studies (MacPherson 2017) <https://www.ncbi.nlm.nih.gov/pubmed/28121095>.

Another recent overview (Yin 2017) confirms that there is increasing evidence for the effectiveness of acupuncture to treat chronic low back, neck, shoulder, and knee pain, as well as headaches. Additional data support its use as an adjunct or alternative to opioids, and in perioperative settings: acupuncture is incrementally being introduced into orthodox pain medicine practices:

<https://www.ncbi.nlm.nih.gov/pubmed/?term=Acupuncture+for+chronic+pain%3A+an+update+and+critical+overview>

Away from the rather artificial environment of specially constructed trials, and review of those trials, it is also instructive to look at treatments in their usual setting, ie observational studies.

The largest of these on chronic pain conditions, mainly back pain (45 per cent), headache (36 per cent) and osteoarthritis (12 per cent), was for acupuncture covered by the German state health insurance scheme, with 450,000 patients and 8,700 medical acupuncturists. Acupuncture proved a highly popular treatment option and 76 per cent of the patients had a good response, 16 per cent minimal and 4 per cent unchanged. Results indicate that acupuncture provided by qualified therapists is safe, and patients benefit from the treatment.

## Low back pain

This is the single most common presenting condition for acupuncture. The most up-to-date, highest quality evidence, based on very large numbers of trials and patients, is in the Vickers 2018 paper listed under chronic pain: <https://www.ncbi.nlm.nih.gov/pubmed/29198932>

NICE, having recommended acupuncture for low back pain in 2009, withdrew its endorsement in 2016, despite there then being more and better evidence supporting it. In practice, however, many parts of the NHS continue to offer or recommend acupuncture and there were at least 138 recommendations in respect of back pain made by the NHS or regional NHS groups between 2005 and 2018 (Birch et al 2018): <https://www.ncbi.nlm.nih.gov/pubmed/29912569>

Many other reviewers disagree with NICE's interpretation of the evidence on acupuncture, both in academic papers and clinical guidelines:

- SIGN, the Scottish equivalent to NICE: <https://www.sign.ac.uk/sign-136-management-of-chronic-pain.html>
- American College of Physicians (Chou et al 2017) <https://www.ncbi.nlm.nih.gov/pubmed/28192793>
- Agency for Healthcare Research and Quality, part of the US Department of Health and Human Services, the official supplier of healthcare evidence reviews in the US (Chou et al, 2016): <https://www.ncbi.nlm.nih.gov/books/NBK350276/>
- A systematic review of existing guidelines for making recommendations in Ontario (Wong et al, 2016): <https://www.ncbi.nlm.nih.gov/pubmed/27712027>
- An overview of systematic reviews from New Zealand/Northern Ireland (Liu et al, 2015): <https://www.ncbi.nlm.nih.gov/pubmed/25821485>
- A network meta-analysis comparing 21 different therapies for sciatica (Lewis et al 2015). This rated acupuncture as the second-best therapy in terms of pain intensity and overall effect. It was clearly superior to exercise therapy and radio frequency treatment, both of which are recommended by NICE: <https://www.ncbi.nlm.nih.gov/pubmed/24412033>

There are very many more. Birch (2018) identified more than 100 clinical practice guidelines worldwide with positive recommendations for acupuncture for back pain: <https://www.ncbi.nlm.nih.gov/pubmed/29912569>

## Osteoarthritis

The most up-to-date, highest quality evidence, based on very large numbers of trials and patients, is in the Vickers 2018 paper listed under chronic pain: acupuncture is better than sham or usual care: <https://www.ncbi.nlm.nih.gov/pubmed/29198932>

A recent systematic review specifically focused on acupuncture for chronic knee pain (Zhang et al 2017) concluded that acupuncture provided significant benefits and was as safe as the control groups: <https://www.ncbi.nlm.nih.gov/pubmed/29117967>

Osteoarthritic knee pain is one of very few conditions where acupuncture has been compared against many other possible treatments using a statistical technique known as network meta-analysis. Acupuncture was ranked second out of 21 physical treatments, better than those (such as exercise) that NICE recommended in its 2014 guideline (when it rejected acupuncture) (Corbett et al 2013): <https://www.ncbi.nlm.nih.gov/pubmed/23973143>

For hip, rather than knee, osteoarthritis there is much less data: a 2018 systematic review (Manheimer et al) included only six trials and 413 people. Acupuncture was beneficial as an add-on to usual GP care, which is likely to be of more practical interest for patients and clinicians than that it was also found to be similar to sham. Given that sham acupuncture can be considered to be a diluted form of 'real' acupuncture rather than an inert placebo it's not unexpected to see only small differences. More trials, larger and better quality, are needed to reach stronger conclusions: <https://www.ncbi.nlm.nih.gov/pubmed/29729027>

There have been more than 50 NHS publications recommending acupuncture for osteoarthritis (largely knee or hip) since 2005, and many more worldwide (Birch et al 2018): <https://www.ncbi.nlm.nih.gov/pubmed/29912569>

NICE is again an exception, in its 2014 guideline, but SIGN, the Scottish guideline body, endorses acupuncture: <https://www.sign.ac.uk/sign-136-management-of-chronic-pain.html>

## Neck pain

In a large UK randomised controlled trial both acupuncture and Alexander technique resulted in substantial improvements in neck pain compared to usual care (MacPherson et al, 2015): <https://www.ncbi.nlm.nih.gov/pubmed/26524571>

Acupuncture is also likely to be cost-effective in comparison to usual care alone (Essex 2017): <https://www.ncbi.nlm.nih.gov/pubmed/29211741>; (Van der Velde 2015): <https://www.ncbi.nlm.nih.gov/pubmed/26631759>

A more recent review (Seo et al 2017) found it to be similarly effective to conventional medicine for pain and disability but better than conventional treatment alone when both are used together: <https://www.ncbi.nlm.nih.gov/pubmed/29121797>

There is also some evidence of superiority over sham for pain relief and quality of life outcomes (Ho 2017). This came from a randomised controlled trial (RCT) from Hong Kong that was too recent to be included in the above review: <https://www.ncbi.nlm.nih.gov/pubmed/28715459>

There have been around 50 NHS publications recommending acupuncture for neck pain since 2005, and many more worldwide (Birch et al 2018): <https://www.ncbi.nlm.nih.gov/pubmed/29912569>

## Shoulder pain

People with shoulder pain were included in the large chronic pain review (Vickers 2018) already referred to above. As with back, knee and head pain acupuncture showed a significant clinical superiority over usual care and a smaller advantage over sham:

<https://www.ncbi.nlm.nih.gov/pubmed/29198932>

Acupuncture appears to be a useful adjunct to rehabilitative treatment for a number of post-stroke conditions, and shoulder pain is one of them (Lee and Lim 2016). Although it had positive findings the review authors, as is often the case, called for further trials to substantiate this. In fact several more trial reports have appeared in the literature in the last two years:

<https://www.ncbi.nlm.nih.gov/pubmed/27547224>

## Other musculoskeletal chronic pain conditions

There is also promising evidence for acupuncture in respect of:

- plantar heel pain (plantar fasciitis): systematic reviews – Thiagarajah 2017, Salvioli 2017
- lateral elbow pain (tennis elbow): systematic reviews – Gadau 2014, Tang 2015: recent trials – Hsu 2016, Ural 2017, Wong 2017
- temporomandibular pain: systematic review – Fernandes 2017

## Headache and migraine

Acupuncture has had a good profile for both migraine and tension headaches since the Cochrane reviews of 2009. Subsequently it came to be recommended by NICE in its 2012 guideline: <https://www.nice.org.uk/guidance/cg150>

In 2016 the Cochrane review team updated both of these headache reviews. They found the evidence in respect of migraine to have improved since 2009. Acupuncture is effective in helping to reduce migraine frequency and is at least as good as prophylactic drugs:

<https://www.ncbi.nlm.nih.gov/pubmed/27351677>

For tension-type headaches there was scarcely any new data and the original conclusion stands – acupuncture is an effective preventive treatment:

<https://www.ncbi.nlm.nih.gov/pubmed/27092807>

Other systematic reviews have similar findings:

<https://www.ncbi.nlm.nih.gov/pubmed/30007828>

And cost effectiveness has been established: <https://www.ncbi.nlm.nih.gov/pubmed/22863652>

More recent trials provide support for longer- as well as shorter-term benefits and confirm that acupuncture is a more desirable option than botulinum injection. As well as prevention it may also alleviate symptoms in acute attacks, and as well as relieving symptoms it can also increase coping mechanisms.

There have been more than 80 NHS publications since 2005 recommending acupuncture for both tension headaches and migraine, and many more worldwide (Birch et al 2018):

<https://www.ncbi.nlm.nih.gov/pubmed/29912569>

## Chronic pelvic pain/chronic prostatitis

From the prestigious Cochrane Collaboration there is a recent review of non-drug treatments for prostatitis/pelvic pain (Franco 2018). Acupuncture treatment was associated with clinically meaningful reduction in prostatitis symptoms compared with standard medical therapy and with

sham. Only one other of the various interventions analysed had credible evidence of effectiveness: <https://www.ncbi.nlm.nih.gov/pubmed/30019814>

## Allergic respiratory conditions

### Allergic rhinitis (hay fever)

In recent years reviews have consistently found acupuncture to be effective for allergic rhinitis, both the seasonal and perennial types, and to compare favourably with anti-histamines (Taw 2015): <https://www.ncbi.nlm.nih.gov/pubmed/25943957>; (Feng et al 2015) <https://www.ncbi.nlm.nih.gov/pubmed/25590322>

It is also recommended in the clinical guidelines for allergic rhinitis produced by the American Academy of Otolaryngology – Head and Neck Surgery Foundation:

<https://www.ncbi.nlm.nih.gov/pubmed/?term=Guideline%20Otolaryngology%20Development%20Group.%20AAO-HNSF%5BCorporate%20Author%5D>

Two studies have established its cost-effectiveness (Kim 2012, Witt 2010).

### Allergic asthma

In a large (1,445 patients) German RCT acupuncture (up to 15 sessions) was given in addition to routine care and compared to treatment with routine care alone (Brinkhaus et al 2017).

Additional acupuncture treatment was associated with increased disease-specific and health-related quality of life compared to routine care alone:

<https://www.ncbi.nlm.nih.gov/pubmed/28287818>

## Digestive system

### Constipation

Much Chinese research in the past has been downgraded due to poor methodology but this has improved in recent years. This very large, multicentre randomised trial, published recently in one of the top western medical journals showed that electroacupuncture was significantly superior to sham for patients with chronic severe functional constipation. After 8 weeks of treatment 31 per cent of acupuncture group patients had 3 or more bowel motions per week v 12 per cent for the sham, and the difference was even more marked at the week 20 follow-up (Lin 2016):

<https://www.ncbi.nlm.nih.gov/pubmed/27618593>

Another multicentre Chinese trial (Zheng 2018a) looked at three different acupuncture approaches in comparison to mosapride, a drug used for various gastrointestinal disorders. All four groups were equally effective at the end of the treatment course but acupuncture was more effective at the follow-up point, a month later: <https://www.ncbi.nlm.nih.gov/pubmed/29392784>

Further support for acupuncture comes in a systematic review and analysis comparing eight different non-drug treatments. Acupuncture and TENS were the most effective at controlling symptoms of chronic functional constipation (Zheng 2018b):

<https://www.ncbi.nlm.nih.gov/pubmed/30125427>

## Irritable bowel syndrome (IBS)

In one of the series of large RCTs in the UK, directed by traditional acupuncturist and researcher Professor Hugh MacPherson, acupuncture was found to be superior to usual care on IBS symptom severity score at 6, 9 and 12 months but not significantly so at 24 months (MacPherson 2017): <https://www.ncbi.nlm.nih.gov/pubmed/26980547>

For diarrhoea-predominant IBS a large Chinese RCT showed electroacupuncture to be similarly effective to the drug loperamide in reducing the frequency of bowel movements (Zheng 2016): <https://www.ncbi.nlm.nih.gov/pubmed/27310980>

Two recent meta-analyses have found acupuncture to be more effective than drugs for diarrhoea-predominant IBS (Zhu 2018): <https://www.ncbi.nlm.nih.gov/pubmed/29977312>; (Deng 2017): <https://www.ncbi.nlm.nih.gov/pubmed/29231356>

Acupuncture may also help with the constipation-predominant version of IBS (Pei 2015) but there is much less research on this.

## Dyspepsia

Zheng (2018c) reported interesting results of a multicentre placebo-controlled clinical study on the use of electroacupuncture for functional dyspepsia. At the end of the treatment course the authentic acupuncture group had substantially better results both for complete absence of symptoms and for adequate relief, though the differences were no longer evident two months later: <https://www.ncbi.nlm.nih.gov/pubmed/29488274>

A smaller Korean trial found (manual) acupuncture was better than a waiting list control (Ko 2016): <https://www.ncbi.nlm.nih.gov/pubmed/27732083>

The most recent systematic review (16 trials, 1436 participants) was also positive for acupuncture: significantly better than sham and medications (Pang 2016): <https://www.ncbi.nlm.nih.gov/pubmed/28119758>.

## Urinary incontinence

This is another area where there has been a substantial increase in the quality of the research output from China in recent years, with landmark papers published in top Western medical journals. This was the case with Liu's 2017 study, a large, multicentre RCT for women with stress incontinence. It showed that electroacupuncture, compared with sham electroacupuncture, resulted in less urine leakage after 6 weeks:

<https://www.ncbi.nlm.nih.gov/pubmed/28655016>

In the latest systematic review (Zhao 2018), acupuncture (in particular electroacupuncture) was more effective than sham in decreasing night-time incontinence, relieving voiding symptoms and enhancing patients' quality of life. Ten RCTs with 794 patients were included. The inclusion in future reviews of trials such as Liu's, and others in the pipeline, will transform the evidence base: <https://www.ncbi.nlm.nih.gov/pubmed/29465566>.

## Infertility

### Assisted conception (IVF and ICSI)

The multiplicity of trials of adjunctive acupuncture with IVF treatment has delivered conflicting and confusing results. A recent meta-analysis showed clearly that different subgroups in the analysis give different results; in particular, acupuncture delivered during the ovarian hyperstimulation phase is associated with markedly superior IVF results for pregnancy and live birth rates, whereas this is not the case when given during embryo transfer (Qian 2016):

<https://www.ncbi.nlm.nih.gov/pubmed/27995371>

Other recent systematic reviews have reached similar conclusions (Shen 2015):

<https://www.ncbi.nlm.nih.gov/pubmed/24854767>; (Schwarze 2018):

<https://www.ncbi.nlm.nih.gov/pubmed/?term=acupuncture+and+ivf+and+schwarze>

Acupuncture just at embryo transfer could provide significant IVF-related stress reduction even if it is insufficient to improve birth outcomes but more sessions, over an extended time period, may be required for optimal effect, and this has not yet been explored adequately in research trials (Hullender Rubin 2018): <https://www.ncbi.nlm.nih.gov/pubmed/29440044>

## Natural fertility: female

The vast bulk of research has been concerned with acupuncture as an adjunct to IVF and related techniques, with little devoted to natural fertility, even though it has been used for this in East Asian countries for centuries. There is preliminary evidence that it may help with menstrual and ovulatory problems in women who are having trouble getting pregnant, but much more research is needed to confirm this. There has been some focus on polycystic ovarian syndrome, with three recent reviews. They point to possible benefits for ovulation, menstruation and pregnancy rates, with regulation of reproductive hormones, but the evidence is limited and low quality (Jo 2017): <https://www.ncbi.nlm.nih.gov/pubmed/28591042>; (Lim 2016):

<https://www.ncbi.nlm.nih.gov/pubmed/27136291>; (Wu 2016):

<https://www.ncbi.nlm.nih.gov/pubmed/26984837>

In the last two years (too recent to have appeared in the reviews) at least six randomised trials of acupuncture for PCOS-related infertility, all from China, have been published in western databases. Five of them point to beneficial effects, generally compared to the drug clomiphene. The largest of them found differently, but its treatment regime, design and analysis have been criticised by many researchers, some of whom even re-analysed the data and came up with entirely different results. It can only be said that the case is still to be proven, though there is strong experimental evidence that acupuncture can influence reproductive functioning through a number of different mechanisms.

## Male infertility

Again, there have been a number of small trials over the years, with promising indications for acupuncture in improving various sperm characteristics. A systematic review in 2015 included 12 studies with 2177 patients. Acupuncture was found to be superior to medication, or superior when combined with it, for sperm concentration and quality and response rates but the quality of the studies was poor (He 2015): <https://www.ncbi.nlm.nih.gov/pubmed/26333228>

## Mental health

### Depression

There have been few trials in the West of acupuncture for mental ill health, fewer still of the size and quality of this one, with 755 patients recruited from primary care. Both acupuncture and counselling produced significantly better depression scores than usual care (MacPherson 2013): <https://www.ncbi.nlm.nih.gov/pubmed/24086114>.

About half of the patients also suffered substantially with physical pain and these people did significantly better with acupuncture than counselling (Hopton 2014):

<https://www.ncbi.nlm.nih.gov/pubmed/24793257>

Acupuncture was also calculated to be cost-effective when compared to either usual care or counselling (Spackman 2014): <https://www.ncbi.nlm.nih.gov/pubmed/25426637>

The latest Cochrane review is also positive, albeit in a more restrained manner, as is usual for these (Smith 2018). Acupuncture was moderately more effective than no treatment, slightly better than pharmaceutical treatment or sham acupuncture, and similar to psychological therapies. As an add-on to medication it was found to be highly effective:

<https://www.ncbi.nlm.nih.gov/pubmed/29502347>

Acupuncture has also been found to help some specific groups of people with depression, for example post-natal, with cancer and those convalescing after a stroke (Yang 2016):

<https://www.ncbi.nlm.nih.gov/pubmed/27562656>

## Anxiety

There has been surprisingly little research on generalised or chronic anxiety; much more for situational anxiety, for example pre-operative, exam-related or associated with stressful work. The results have been consistently positive, with fewer side effects than conventional treatment, though the nature and quality of the studies is very variable according to recent reviews (Amorim 2018): <https://www.ncbi.nlm.nih.gov/pubmed/29705474>; Goyata (2016):

<https://www.ncbi.nlm.nih.gov/pubmed/27355312>, as well as older ones (Pilkington 2007).

Situational anxiety trials have often used auriculotherapy for its convenience and effectiveness, such as this recent example with hospital nurses suffering high levels of stress (Kurebayashi 2017). Three different methods of stimulating the ear points were used alongside a control. Needle stimulation was most effective and reduced anxiety levels significantly more than for the control group: <https://www.ncbi.nlm.nih.gov/pubmed/28403335>

The British Acupuncture Council (BAcC) has been working with the charity Anxiety UK to gather generalised anxiety outcomes data from patients having a course of six acupuncture treatments as in usual practice. Preliminary results on 30 patients indicate that the effectiveness is at least as good as that seen with psychological therapies such as CBT.

## PTSD

This is also an area where the BAcC has been research-active. A before and after observational study demonstrated very large improvements in the PTSD outcome measure, such that none of the patients completing the course of 6 sessions would be still be classed as having PTSD. The participants were all forces veterans (Healthwatch Norfolk 2018). Acupuncture is also much used for treating veterans in the US, through the Veterans Authority, and for serving personnel within the military.

In a systematic review of seven randomised trials there were significant differences favouring acupuncture (versus any comparator) on PTSD symptoms, at post-intervention and at longer follow-up (Grant 2018): <https://www.ncbi.nlm.nih.gov/pubmed/28151093>

## Insomnia

In a randomised trial for insomnia with 224 participants acupuncture treatment was better than waiting list (no acupuncture) in reducing insomnia and also anxiety/depressive symptoms and fatigue. The improvements were maintained at 13 weeks after treatment (Chung 2018): <https://www.ncbi.nlm.nih.gov/pubmed/29229613>

Another recent RCT on primary insomnia compared acupuncture against sham acupuncture. Seventy-two patients were asked to wear sleep monitors and complete questionnaires every two weeks for a total of eight weeks. Compared with pre-treatment baseline, patients in both groups had varying degrees of improvements in their sleep conditions with significant change in all indicators in the acupuncture group. The Insomnia Severity Index improved significantly more in the acupuncture group compared to the sham, as did other measures of sleep quality and also psychological health (Yin 2017): <https://www.ncbi.nlm.nih.gov/pubmed/28899535>

These trials post-date the most recent systematic review, which included 30 studies and more than 2300 participants (Shergis 2016). Most trials were from China and acupuncture compared favourably against medication. In two studies acupuncture was superior to sham. However, the quality was poor: <https://www.ncbi.nlm.nih.gov/pubmed/27261976>

The best evidence to date may lie with insomnia linked to other conditions, such as depression (Dong 2017): <https://www.ncbi.nlm.nih.gov/pubmed/28286776>, or stroke (Lee 2016): <https://www.ncbi.nlm.nih.gov/pubmed/27430619>