The Acupuncture Evidence Project: Plain English Summary

The following is a plain English summary of the findings of the Acupuncture Evidence Project (McDonald J, and Janz S, 2017). The full document (81 pages) is available from the Australian Acupuncture and Chinese Medicine Association Ltd (AACMA) http://www.acupuncture.org.au.

Bottom Line

Our study found evidence for the effectiveness of acupuncture for 117 conditions, with stronger evidence for acupuncture’s effectiveness for some conditions than others. Acupuncture is considered safe in the hands of a well-trained practitioner and has been found to be cost effective for some conditions. The quality and quantity of research into acupuncture’s effectiveness is increasing.

Background

Acupuncture originated in China and is now practised throughout the world. Although acupuncture has been practised for thousands of years, evidence of its effectiveness is still controversial. The Australian Acupuncture and Chinese Medicine Association Ltd (AACMA) identified the need for an updated review of the evidence with greater rigour than was possible in the past and commissioned The Acupuncture Evidence Project.

We searched the literature with a focus on systematic reviews and meta analyses (the highest form of evidence available). We sorted the evidence to identify which conditions acupuncture has been found to be most effective for. We also looked for evidence of acupuncture’s safety and cost-effectiveness, and we reported how the evidence for acupuncture’s effectiveness has changed over an eleven-year time-frame.

Key results

Of the 122 conditions identified, strong evidence supported the effectiveness of acupuncture for 8 conditions, moderate evidence supported the use of acupuncture for a further 38 conditions, weak positive/unclear evidence supported the use of acupuncture for 71 conditions, and little or no evidence was found for the effectiveness of acupuncture for five conditions (meaning that further research is needed to clarify the effectiveness of acupuncture in these last two categories).

In addition, research showed that acupuncture was cost effective for 10 conditions, and is safe in the hands of a well-trained practitioner. The level of evidence has increased over the 11-year period of this study for 24 conditions. Placebo-controlled clinical trials consistently underestimate the true effect size of acupuncture (which means that acupuncture is more effective than the type of trials used in this review show), yet they have still demonstrated National Health and Medical Research Council (NHMRC) Level I evidence for the effectiveness of acupuncture for 117 conditions.

It is no longer possible to say that the effectiveness of acupuncture is because of the placebo effect, or that it is useful only for musculoskeletal pain.
Summary of Findings

**Summary of Findings 1:** The following tables summarise the effectiveness of acupuncture for various conditions.

### Table 1. Conditions with strong evidence supporting the effectiveness of acupuncture

Reviews with consistent statistically significant positive effects and where authors have recommended the intervention. The quality of evidence is rated as moderate or high quality.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allergic rhinitis (perennial &amp; seasonal)</td>
<td>Knee osteoarthritis</td>
</tr>
<tr>
<td>Chemotherapy-induced nausea and vomiting (with anti-emetics)</td>
<td>Migraine prophylaxis</td>
</tr>
<tr>
<td>Chronic low back pain</td>
<td>Postoperative nausea &amp; vomiting</td>
</tr>
<tr>
<td>Headache (tension-type and chronic)</td>
<td>Postoperative pain</td>
</tr>
</tbody>
</table>

### Table 2. Conditions with moderate evidence supporting the effectiveness of acupuncture

Reviews reporting all individual RCTs or pooled effects across RCTs as positive, but the reviewers deeming the evidence insufficient to draw firm conclusions. The quality of evidence is rated as moderate or high quality.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute low back pain</td>
<td>Modulating sensory perception thresholds</td>
</tr>
<tr>
<td>Acute stroke</td>
<td>Neck pain</td>
</tr>
<tr>
<td>Ambulatory anaesthesia</td>
<td>Obesity</td>
</tr>
<tr>
<td>Anxiety</td>
<td>Perimenopausal &amp; postmenopausal insomnia</td>
</tr>
<tr>
<td>Aromatase-inhibitor-induced arthralgia</td>
<td>Plantar heel pain</td>
</tr>
<tr>
<td>Asthma in adults</td>
<td>Post-stroke insomnia</td>
</tr>
<tr>
<td>Back or pelvic pain during pregnancy</td>
<td>Post-stroke shoulder pain</td>
</tr>
<tr>
<td>Cancer pain</td>
<td>Post-stroke spasticity</td>
</tr>
<tr>
<td>Cancer-related fatigue</td>
<td>Post-traumatic stress disorder</td>
</tr>
<tr>
<td>Constipation</td>
<td>Prostatitis pain/chronic pelvic pain syndrome</td>
</tr>
<tr>
<td>Craniotomy anaesthesia</td>
<td>Recovery after colorectal cancer resection</td>
</tr>
<tr>
<td>Depression (with antidepressants)</td>
<td>Restless leg syndrome</td>
</tr>
<tr>
<td>Dry eye</td>
<td>Schizophrenia (with antipsychotics)</td>
</tr>
<tr>
<td>Hypertension (with medication)</td>
<td>Sciatica</td>
</tr>
<tr>
<td>Insomnia</td>
<td>Shoulder impingement syndrome (early stage) (with exercise)</td>
</tr>
<tr>
<td>Irritable bowel syndrome</td>
<td>Shoulder pain</td>
</tr>
<tr>
<td>Labour pain</td>
<td>Smoking cessation (up to 3 months)</td>
</tr>
<tr>
<td>Lateral elbow pain</td>
<td>Stroke rehabilitation</td>
</tr>
<tr>
<td>Menopausal hot flushes</td>
<td>Temporomandibular pain</td>
</tr>
</tbody>
</table>
Summary of Findings 1 (continued): The following tables summarise the effectiveness of acupuncture for various conditions.

### Table 3. Conditions with weak positive/unclear evidence supporting the effectiveness of acupuncture

Reviews consisted mostly of weak positive evidence or conflicting evidence between reviews or between authors within a review, with reviewers summarising the evidence as inconclusive. Reviews are of low or very low quality; or there is conflicting levels of evidence within or between reviews.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acupuncture in Emergency Department</td>
<td>Itch</td>
</tr>
<tr>
<td>Acute ankle sprain in adults</td>
<td>Lumbar spinal stenosis</td>
</tr>
<tr>
<td>Alzheimer’s disease</td>
<td>Melasma</td>
</tr>
<tr>
<td>Angina pectoris</td>
<td>Ménière’s disease/syndrome</td>
</tr>
<tr>
<td>Assisted conception in ART</td>
<td>Menopausal syndrome</td>
</tr>
<tr>
<td>Asthma in children</td>
<td>Multiple sclerosis</td>
</tr>
<tr>
<td>Atopic dermatitis</td>
<td>Mumps in children</td>
</tr>
<tr>
<td>Attention Deficit Hyperactivity Disorder (ADHD)</td>
<td>Myelosuppression after chemotherapy</td>
</tr>
<tr>
<td>Autism spectrum disorder (ASD)</td>
<td>Oocyte retrieval pain relief</td>
</tr>
<tr>
<td>Bell’s palsy</td>
<td>Opiate addiction</td>
</tr>
<tr>
<td>Bladder pain syndrome</td>
<td>Opioid detoxification</td>
</tr>
<tr>
<td>Cancer-related insomnia</td>
<td>Parkinson’s disease</td>
</tr>
<tr>
<td>Cancer-related psychological symptoms</td>
<td>Polycystic ovarian syndrome</td>
</tr>
<tr>
<td>Carpal tunnel syndrome</td>
<td>Poor sperm quality</td>
</tr>
<tr>
<td>Chemotherapy-induced peripheral neuropathy</td>
<td>Postnatal depression</td>
</tr>
<tr>
<td>Chronic fatigue syndrome</td>
<td>Postoperative gastroparesis syndrome (PGS)</td>
</tr>
<tr>
<td>Chronic kidney disease</td>
<td>Postoperative ileus</td>
</tr>
<tr>
<td>Chronic obstructive pulmonary disease (COPD)</td>
<td>Post-stroke hiccoughs</td>
</tr>
<tr>
<td>Chronic urinary retention due to spinal cord injury</td>
<td>Premenstrual syndrome</td>
</tr>
<tr>
<td>Chronic urticaria</td>
<td>Primary ovarian insufficiency</td>
</tr>
<tr>
<td>Dysmenorrhoea</td>
<td>Primary Sjogren’s syndrome</td>
</tr>
<tr>
<td>Dyspepsia in diabetic gastroparesis (DGP)</td>
<td>Psoriatic vulgaris</td>
</tr>
<tr>
<td>Erectile dysfunction</td>
<td>Rheumatoid arthritis Slowing progression of myopia</td>
</tr>
<tr>
<td>Exercise performance &amp; post-exercise recovery</td>
<td>Spinal cord injury</td>
</tr>
<tr>
<td>Fatigue in systemic lupus erythematosus</td>
<td>Stress urinary incontinence in adults</td>
</tr>
<tr>
<td>Fibromyalgia</td>
<td>Sudden sensorineural hearing loss</td>
</tr>
<tr>
<td>Functional dyspepsia</td>
<td>Surgery analgesia</td>
</tr>
<tr>
<td>Gag reflex in dentistry</td>
<td>Tinnitus</td>
</tr>
<tr>
<td>Glaucoma</td>
<td>Traumatic brain injury</td>
</tr>
<tr>
<td>Heart failure</td>
<td>Urinary incontinence</td>
</tr>
<tr>
<td>Hot flushes in breast cancer</td>
<td>Uterine fibroids</td>
</tr>
<tr>
<td>Hyperemesis gravidarum</td>
<td>Vascular cognitive impairment without dementia</td>
</tr>
<tr>
<td>Hypoxic ischemic encephalopathy in neonates</td>
<td>Vascular dementia</td>
</tr>
<tr>
<td>Induction of labour</td>
<td>Whiplash associated disorder (WAD)</td>
</tr>
<tr>
<td>Inflammatory bowel disease</td>
<td>Xerostomia in cancer</td>
</tr>
</tbody>
</table>

### Table 4. Conditions with little or no evidence supporting the effectiveness of acupuncture

Reviews have consistently found little support for acupuncture. The quality of the evidence is consistently low or very low. Further research required.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol dependence</td>
<td>Nausea in pregnancy</td>
</tr>
<tr>
<td>Cocaine addiction</td>
<td>Smoking cessation (more than 6 months)</td>
</tr>
<tr>
<td>Epilepsy</td>
<td></td>
</tr>
</tbody>
</table>
Summary of Findings 2: Conditions with evidence of cost-effectiveness.

<table>
<thead>
<tr>
<th>Table 5. Conditions with evidence of cost effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Allergic Rhinitis</td>
</tr>
<tr>
<td>- Ambulatory Anaesthesia</td>
</tr>
<tr>
<td>- Chronic Pain</td>
</tr>
<tr>
<td>- Depression</td>
</tr>
<tr>
<td>- Dysmenorrhoea</td>
</tr>
<tr>
<td>- Headache</td>
</tr>
<tr>
<td>- Low back pain</td>
</tr>
<tr>
<td>- Migraine</td>
</tr>
<tr>
<td>- Neck Pain (plus usual medical care)</td>
</tr>
<tr>
<td>- Osteoarthritis</td>
</tr>
<tr>
<td>- Post-operative nausea and vomiting</td>
</tr>
</tbody>
</table>

Summary of Findings 3: Conditions with evidence of safety.

<table>
<thead>
<tr>
<th>Table 6. Conditions with evidence of safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condition</td>
</tr>
<tr>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>Acupuncture generally prior to this review</td>
</tr>
<tr>
<td>Allergic Rhinitis</td>
</tr>
<tr>
<td>Ambulatory Anaesthesia</td>
</tr>
<tr>
<td>Alzheimers disease</td>
</tr>
<tr>
<td>Cancer-related psychological symptoms</td>
</tr>
<tr>
<td>Depression</td>
</tr>
<tr>
<td>Low back pain</td>
</tr>
<tr>
<td>Migraine</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Osteoarthritis of the Knee</td>
</tr>
<tr>
<td>Prostatitis pain/chronic pelvic pain syndrome</td>
</tr>
</tbody>
</table>

Summary of Findings 4: Changes in evidence levels over the eleven-year period covered by this review

<table>
<thead>
<tr>
<th>Table 7. Statistical summary of findings of this review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evidence Level</td>
</tr>
<tr>
<td>--------------------------------------------------------</td>
</tr>
<tr>
<td>Strong Evidence of effect</td>
</tr>
<tr>
<td>Moderate Evidence effect</td>
</tr>
<tr>
<td>Unclear/mixed evidence</td>
</tr>
<tr>
<td>Little of no evidence of effect</td>
</tr>
<tr>
<td>Total conditions with some evidence of effect (any level)</td>
</tr>
<tr>
<td>Total conditions reviewed</td>
</tr>
</tbody>
</table>
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ISBN 978-0-9954289-3-5

Paper-based publication

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ISBN 978-0-9954289-2-8

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