VA Evidence Synthesis Program

Synthesizing evidence for VA leadership to improve the health and health care of Veterans

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What is the ESP?

The VA **Evidence Synthesis Program (ESP)**, established in 2007, helps VA fulfill its vision of functioning as a continuously learning health care system. We provide timely, targeted, independent syntheses of the medical literature for the VHA to translate into evidence-based clinical practice, policy, and research.

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**Nimble**
We adapt traditional methods, timelines, and formats to meet our partners’ specific needs.

**Rigorous**
Rigor, transparency, and minimization of bias underlie all our products.

**Relevant**
Emphasis on Veteran population helps ensure our reviews are relevant to VA decision-makers’ needs.
What is the ESP?

- ESP reports are used to help:
  - Develop clinical policies informed by evidence
  - Implement effective services and support VA clinical practice guidelines and performance measures
  - Set the direction for future research to address gaps in clinical knowledge
- Four ESP Centers across the US
  - Directors are VA clinicians and recognized leaders in the field of evidence synthesis, and have close ties to the AHRQ Evidence-based Practice Center Program
- ESP Coordinating Center in Portland
  - Manages national program operations, ensures methodological consistency and quality of products, and interfaces with stakeholders
  - Produces rapid products to inform more urgent policy and program decisions
- To ensure responsiveness to the needs of decision-makers, the program is governed by a Steering Committee composed of health system leadership and researchers

The ESP accepts *topic nominations* throughout the year, and nominations are considered every 4 months.
ESP locations

Coordinating Center
Portland, OR

ESP Center
Minneapolis, MN

ESP Center
Durham, NC

HSR&D/QUERI, VACO
Washington, DC

ESP Center
Providence, RI

ESP Center
Los Angeles, CA

OUR PARTNER

Juli Olson, DC, DACM, FAIHM
National Lead, Acupuncture
Integrative Health Coordinating Center
Central Iowa VAMC, Pain Clinic, Acupuncture
Disclosures

• This presentation was prepared by the Evidence Synthesis Program Coordinating Center located at the VA Greater Los Angeles Health Care System, directed by Paul Shekelle, MD, PhD, Director, Evidence-based Synthesis Program Center and funded by the Department of Veterans Affairs, Veterans Health Administration, Health Services Research and Development.

• The findings and conclusions in this document are those of the author(s) who are responsible for its contents and do not necessarily represent the views of the Department of Veterans Affairs or the United States government. Therefore, no statement in this presentation should be construed as an official position of the Department of Veterans Affairs. No investigators have any affiliations or financial involvement (eg, employment, consultancies, honoraria, stock ownership or options, expert testimony, grants or patents received or pending, or royalties) that conflict with material presented.
Acknowledgments

The ESP consulted several technical and content experts in designing the research questions and review methodology. In seeking broad expertise and perspectives, divergent and conflicting opinions are common and perceived as healthy scientific discourse that results in a thoughtful, relevant systematic review. Ultimately, however, research questions, design, methodologic approaches, and/or conclusions of the review may not necessarily represent the views of individual technical and content experts. The authors gratefully acknowledge the following individuals for their contributions to this project:

Operational Partners

Operational partners are system-level stakeholders who help ensure relevance of the review topic to the VA, contribute to the development of and approve final project scope and timeframe for completion, provide feedback on the draft report, and provide consultation on strategies for dissemination of the report to the field and relevant groups.

Juli Olson, DC, DACM, FAIHM
National Lead, Acupuncture
Integrative Health Coordinating Center
Central Iowa VAMC, Pain Clinic, Acupuncture
Evidence Map of
Acupuncture as Treatment for Adult Health Conditions
Update from 2013–2021

April 2022

Full-length report available on ESP website.
Our Process

Search for reviews
Our Process

Eligible literature:
Systematic reviews that reported health outcomes in adults with conditions treated by Acupuncture, Electro-acupuncture, Battlefield Acupuncture, and/or National Acupuncture Detoxification Association (NADA) protocol compared to sham/placebo, usual care, other therapies, and/or no treatment

We did not include laser acupuncture, moxibustion alone, needling, and traditional Chinese medicine (TCM) without mention of acupuncture and fire acupuncture.
How confident are we that the true effect lies close to that of the estimate of the effect?

Certainty of Evidence (GRADE Working Group)
- High
- Moderate
- Low
- Very low
Our Process

- Search for reviews
- Screened titles and abstracts
- Review for Certainty of Evidence
- Select 1 review per condition + abstract data

1209 citations
501 abstracts
370 Full Texts
104 Full Texts with CoE
Our Process

- **Search for reviews**
- **Screened titles and abstracts**: 1209 citations, 501 abstracts
- **Review for Certainty of Evidence**: 370 Full Texts
- **Select 1 review per condition + abstract data**: 104 Full Texts with CoE
- **Sorted and synthesized**: 64 reviews included
Comparison with Previous Review

Only in 2014 map
- Nausea
- Blood pressure
- Plantar heel pain
- Restless leg syndrome

Not identified in 2022
- Diabetic Peripheral Neuropathy
- Irritable Bowel Disorder
- Peripheral Neuropathy
- Lateral Elbow Pain
- Angina
- Dyspepsia
- Herpes Zoster
- Post-herpetic Neuralgia
- Primary Trigeminal Neuralgia
Review Characteristics

Size of review
- 28 Small reviews <10 studies
- 26 Medium reviews 10-25 studies
- 10 Large reviews >25 studies

Acupuncture included
- 47 Mix of types
- 17 Single type

Comparators included
- 35 >1 comparator separate analyses
- 7 >1 comparator no separate analyses
- 14 active or usual care only
- 8 sham or placebo only
Conditions Represented in Maps

- Painful conditions: 34
  - Pain, not MSK: 23
  - Musculoskeletal pain: 11
- Other conditions: 9
- Women’s health: 9
- Mental health: 12
- Adverse events: 17
Information Represented in Evidence Maps

**Effect of acupuncture**

- **Benefit for Acupuncture**
- **No Benefit for Acupuncture**

**Strength of findings**

- At least 1 Conclusion Rated as High or Strong Certainty
- At least 1 Conclusion Rated as Moderate Certainty
- All Conclusions are Rated as Low or Very Low Certainty

**Number of Included Studies**
- > 25 included studies
- 10 – 25 included studies
- < 10 included studies

**Type of Acupuncture Used**
- Manual Acupuncture Studies (may include auricular acupuncture or electroacupuncture)
- Exclusively Auricular Acupuncture
- Exclusively Electroacupuncture

**Comparators**
- Mixed – No Subgroups
- Mixed – With Subgroups
- Sham/Placebo
- Other Active Therapy/Usual Care
<table>
<thead>
<tr>
<th>Conclusion Level</th>
<th>Benefit for Acupuncture</th>
<th>No Benefit for Acupuncture</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least 1 Conclusion Rated as</td>
<td>Fibromyalgia-- pain, fatigue, sleep quality</td>
<td></td>
</tr>
<tr>
<td>High or Strong Certainty</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At least 1 Conclusion Rated as</td>
<td>Chronic prostatitis/chronic pelvic pain syndrome</td>
<td>Post herpetic neuralgia</td>
</tr>
<tr>
<td>Moderate Certainty</td>
<td>Post-op pain</td>
<td>Migraine</td>
</tr>
<tr>
<td></td>
<td>Fibromyalgia</td>
<td>Post-op pain</td>
</tr>
<tr>
<td></td>
<td>Migraine</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tension headache</td>
<td></td>
</tr>
<tr>
<td>All Conclusions are Rated as</td>
<td>Post-caesarean pain</td>
<td>Peripheral neuropathy</td>
</tr>
<tr>
<td>Low or Very Low Certainty</td>
<td>Post-op pain*</td>
<td>Kidney stone*</td>
</tr>
<tr>
<td></td>
<td>Painful conditions in emergency department</td>
<td>Primary trigeminal neuralgia</td>
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<tr>
<td></td>
<td>Chemotherapy-induced peripheral neuropathy</td>
<td>Carpal tunnel syndrome</td>
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<tr>
<td></td>
<td>Migraine headache without aura</td>
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<td></td>
<td>Pain management in cancer</td>
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<tr>
<td></td>
<td>Related side effects in breast cancer associated with hormone therapy</td>
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</table>
Musculoskeletal pain (n=11)

<table>
<thead>
<tr>
<th>Benefit for Acupuncture</th>
<th>No Benefit for Acupuncture</th>
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</thead>
<tbody>
<tr>
<td><strong>At least 1 Conclusion Rated as High or Strong Certainty</strong></td>
<td></td>
</tr>
<tr>
<td>• Shoulder pain*</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>At least 1 Conclusion Rated as Moderate Certainty</strong></td>
</tr>
<tr>
<td>• Hip pain</td>
<td>• Knee pain*</td>
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<tr>
<td>• Immediate pain relief in musculoskeletal pain conditions</td>
<td></td>
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<tr>
<td>• Chronic musculoskeletal pain</td>
<td></td>
</tr>
<tr>
<td>• Temporomandibular joint dysfunction*</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>All Conclusions are Rated as Low or Very Low Certainty</strong></td>
</tr>
<tr>
<td>• Chronic low back pain*</td>
<td>• Acute low back pain*</td>
</tr>
<tr>
<td>• Chronic neck pain*</td>
<td>• Low back pain – herniated disc</td>
</tr>
<tr>
<td>• Chronic low back pain*</td>
<td>• Post-stroke shoulder-hand syndrome</td>
</tr>
<tr>
<td>• Frozen shoulder</td>
<td>• Ankle sprain/pain</td>
</tr>
<tr>
<td>• Lateral elbow pain</td>
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</table>
# Mental Health

(n=12)

<table>
<thead>
<tr>
<th>At least 1 Conclusion Rated as High or Strong Certainty</th>
<th>Benefit for Acupuncture</th>
<th>No Benefit for Acupuncture</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least 1 Conclusion Rated as Moderate Certainty</td>
<td>Pre-op anxiety</td>
<td>Depression in pregnancy</td>
</tr>
<tr>
<td></td>
<td>Opioid use disorder</td>
<td>Tobacco use disorder</td>
</tr>
<tr>
<td></td>
<td>Insomnia in elderly</td>
<td>Primary insomnia</td>
</tr>
<tr>
<td></td>
<td>Depression</td>
<td></td>
</tr>
<tr>
<td>All Conclusions are Rated as Low or Very Low Certainty</td>
<td>Major Depressive Disorder</td>
<td>Post-stroke depression</td>
</tr>
<tr>
<td></td>
<td>Primary Insomnia</td>
<td>Schizophrenia</td>
</tr>
<tr>
<td></td>
<td>Post-Traumatic Stress Disorder</td>
<td></td>
</tr>
</tbody>
</table>
## Women’s Health (n=9)

<table>
<thead>
<tr>
<th>Category</th>
<th>Benefit for Acupuncture</th>
<th>No Benefit for Acupuncture</th>
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</thead>
<tbody>
<tr>
<td>At least 1 Conclusion Rated as High or Strong Certainty</td>
<td></td>
<td>• Assistive reproductive therapy</td>
</tr>
<tr>
<td>At least 1 Conclusion Rated as Moderate Certainty</td>
<td>• Pregnancy - low back and pelvic pain</td>
<td></td>
</tr>
<tr>
<td>All Conclusions are Rated as Low or Very Low Certainty</td>
<td>• Polycystic ovary syndrome/ovarian hyperstimulation&lt;br&gt;• Resumption of menses&lt;br&gt;• Oocyte retrieval&lt;br&gt;• Premenstrual syndrome&lt;br&gt;• Menopause</td>
<td>• Anovulatory fertility&lt;br&gt;• Dysmenorrhea</td>
</tr>
</tbody>
</table>
# Other Conditions (n=9)

<table>
<thead>
<tr>
<th>Conclusion Level</th>
<th>Benefit for Acupuncture</th>
<th>No Benefit for Acupuncture</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least 1 Conclusion Rated as High or Strong Certainty</td>
<td><img src="image1" alt="Chronic fatigue syndrome" /></td>
<td><img src="image2" alt="Inflammatory bowel disease" /></td>
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<tr>
<td></td>
<td><img src="image3" alt="Angina" /></td>
<td><img src="image4" alt="Irritable bowel syndrome" /></td>
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<tr>
<td></td>
<td><img src="image5" alt="Herpes zoster" /></td>
<td><img src="image6" alt="Improvement of cognitive impairment after stroke" /></td>
</tr>
<tr>
<td>At least 1 Conclusion Rated as Moderate Certainty</td>
<td><img src="image7" alt="Chronic fatigue syndrome" /></td>
<td><img src="image8" alt="Health-related quality of life in cancer patients" /></td>
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<tr>
<td></td>
<td><img src="image9" alt="Inflammatory bowel disease" /></td>
<td><img src="image10" alt="Tinnitus" /></td>
</tr>
<tr>
<td></td>
<td><img src="image11" alt="Irritable bowel syndrome" /></td>
<td></td>
</tr>
<tr>
<td>All Conclusions are Rated as Low or Very Low Certainty</td>
<td><img src="image12" alt="Chronic fatigue syndrome" /></td>
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<tr>
<td></td>
<td><img src="image13" alt="Functional dyspepsia" /></td>
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### Adverse Events (n=17)

<table>
<thead>
<tr>
<th>-certainty of evidence</th>
<th>Fewer Adverse Events in Acupuncture Group</th>
<th>No Difference Between Groups</th>
<th>Insufficient Evidence to Determine Difference</th>
<th>More Adverse Events in Acupuncture Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>High or Strong</td>
<td>Migraine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>Knee pain</td>
<td>Depression*</td>
<td>Anovulatory fertility*</td>
<td></td>
</tr>
<tr>
<td>Low or Very Low</td>
<td>Kidney stone, Post-stroke depression, Primary insomnia, Carpal tunnel syndrome*</td>
<td>Premenstrual syndrome, Peripheral neuropathy</td>
<td>Post-caesarean pain, Anovulatory infertility*, Major depressive disorder, Tension headache, Depression*</td>
<td>Carpet tunnel syndrome*</td>
</tr>
</tbody>
</table>
Main Takeaways

• More mapped conclusions for painful conditions than for all other conditions combined
• Small number of reviews with at least 1 conclusion rated as high certainty of evidence (n=3)
• ~75% of reviews with moderate certainty of evidence compared acupuncture to sham or control acupuncture, or no treatment
• Majority of reviews reported conclusions rated as low or very low certainty of evidence
• Acupuncture is at least safe or safer than usual care
Discussion and Future Directions

Discussion

Modest # of reviews with at least moderate certainty of evidence

Acupuncture vs. sham / Acupuncture vs. control acupuncture

Future Directions

Critical research need is for better evidence to increase certainty of evidence for acupuncture

Priority should be studies comparing acupuncture to other recommended/accepted/active therapies for the condition
Limitations

...of synthesis approach
  • May not have identified all the potentially eligible evidence
  • Did not independently evaluate the source evidence

... of current acupuncture evidence base
  • The variation (and controversy) with which sham acupuncture is designed
Questions?

If you have questions, feel free to contact:

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ESP on the Internet
ESP on the VA Intranet
Contact the ESP Coordinating Center
Discussants

• Juli Olson
• Janet Clark