



August 27, 2021

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Dear Dr. Cook:

The American Society of Acupuncturists (ASA) and National Certification Commission for Acupuncture and Oriental Medicine (NCCAOM)<sup>®</sup> appreciate the opportunity to provide feedback to the Patient-Centered Outcomes Research Institute's (PCORI) proposed 2022-2032 National Priorities for Health.

Together, the ASA and the NCCAOM represent over 40,000 professional acupuncturists across the United States. Throughout the millennia, acupuncture has taken a biopsychosocial approach to healing and wellness and focuses on physical, mental, and emotional issues related to illnesses. Acupuncturists' obligation as leaders in the field of complementary and integrative health is to work preemptively to maintain and promote patient wellness and healing.

As PCORI seeks feedback to inform its 10-year National Priorities for Health research, the ASA and the NCCAOM encourage PCORI to prioritize acupuncture research to enhance the evidence base for its effects on acute and chronic pain.

#### PCORI's Unique Contribution in Enhancing Acupuncture's Evidence Base

By initiating and funding more specific and thorough acupuncture studies that include—and are led by—NCCAOM-certified, licensed, and physician acupuncturists, PCORI could help uncover evidence that could facilitate viable pathways to non-opioid and non-pharmacological pain-management treatments.

As such, the ASA and the NCCAOM provide the following feedback to PCORI's proposed 2022-2032 National Priorities for Health research.

## 1. Increase Evidence for Existing Interventions and Emerging Innovations in Health

**PCORI Goal: Strengthen and expand ongoing comparative clinical effectiveness research focused on both existing interventions and emerging innovations to improve healthcare practice, health outcomes, and health equity.**

*To help reach this goal, the ASA and the NCCAOM recommend that PCORI dedicate research funds and initiatives to continue to strengthen the evidence base for acupuncture as an effective pain-management modality.*

Acupuncture is one of the most evidence-based methods of non-pharmacologic pain control available today. The existing western-based evidence effectively demonstrates that acupuncture is a valuable component to reducing opioid reliance and overuse, as well as increasing viable alternatives to surgery and other invasive procedures. As a wellness application, acupuncture also offers promising secondary benefits that may further improve symptoms of anxiety, depression, and insomnia—which would boost quality of life and overall health across populations.

Research also shows that acupuncture can help manage pain by stimulating the body's production of “endogenous opioids” as well as natural anti-inflammatory compounds.<sup>1,2,3</sup> This stimulation can facilitate the body's natural chemistry to create the potential for similar—or sometimes better—benefits than synthetic drugs, without risking addiction or side effects. Research demonstrates that acupuncture has the potential to reduce, eliminate the need for opioids and non-opioid drugs, and help treat opioid addiction.<sup>4,5,6,7</sup>

**Opportunity:** The existing evidence base for acupuncture's role in pain-management and wellness has prompted national and state regulatory, accreditory, and policy bodies to recognize and/or offer acupuncture services. This recognition provides a snapshot into acupuncture's potential as a non-invasive, non-pharmacological pain-management modality for many populations.

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<sup>1</sup> Zhang R, Lao L, Ren K, Berman BM. Mechanisms of acupuncture-electroacupuncture on persistent pain. *Anesthesiology*. 2014; 120(2):482-503.

<sup>2</sup> Zhao ZQ. Neural mechanism underlying acupuncture analgesia. *Progress in neurobiology*. 2008; 85(4):355-75.

<sup>3</sup> McDonald JL, Cripps AW, Smith PK. Mediators, Receptors, and Signalling Pathways in the Anti-Inflammatory and Antihyperalgesic Effects of Acupuncture. *Evidence-based complementary and alternative medicine: eCAM*. 2015; 2015:975632.

<sup>4</sup> Wen H, Cheung SYC. Treatment of drug addiction by acupuncture and electrical stimulation. *Asian J Med*. 1973; 9:138-41.

<sup>5</sup> Association NAD. National Acupuncture Detoxification Association <http://www.acudetox.com/about-nada/12-faqs2013>.

<sup>6</sup> Raith W, Schmolzer GM, Resch B, Reiterer F, Avian A, Koestenberger M, et al. Laser Acupuncture for Neonatal Abstinence Syndrome: A Randomized Controlled Trial. *Pediatrics*. 2015; 136(5):876-84.

<sup>7</sup> Wu LZ, Cui CL, Tian JB, Ji D, Han JS. Suppression of morphine withdrawal by electroacupuncture in rats: dynorphin and kappa-opioid receptor implicated. *Brain research*. 1999; 851(1-2):290-6.

- The U.S. Centers for Medicare and Medicaid Services' (CMS) 2020 national-coverage decision for chronic lower back pain (cLBP),<sup>8</sup> and U.S. Department of Defense's and the Veterans Health Administration's coverage policies for acupuncture demonstrate its efficacy in managing acute and chronic pain for various conditions. TRIWEST offers acupuncture services to Veterans in all regions and the number of Veteran Medical Centers that offer acupuncture services continues to expand.<sup>9</sup>
- In 2018, the Joint Commission revised its pain-management standards to require the health systems it accredits to provide nonpharmacological pain modalities such as acupuncture as one option, by licensed independent practitioners.<sup>10</sup>
- In September 2017, 37 state attorneys general sent a letter to the America's Health Insurance Plans (AHIP) requesting that the organization require its payer members to cover acupuncture for pain management.<sup>11</sup>

AHIP has not yet agreed to this request, but demand for increased access and coverage continues as the existing evidence demonstrates acupuncture's effectiveness. According to a large observational retrospective study on the association of the initial healthcare provider for new-onset lower back pain with early and long-term opioid use study published in the *BMJ*, patients who initially sought care from a licensed acupuncturist were 91-percent less likely to use opioids in the short- and long-term.

This finding was similar to reductions seen in those receiving chiropractic care (90 percent), and physical therapy (85 percent). The study concluded that therapists such as chiropractors and acupuncturists are more protective of early and long-term opioid use for new cLBP episodes compared with primary care physicians.<sup>12</sup>

**Opportunity:** Facilitating research within hospitals to demonstrate pre- and post-operative studies for surgical recovery and healing with acupuncture as a non-pharmacological treatment would help enable increased coverage and recognition for acupuncture as an acute pain-management option. Further, the ASA and the NCCAOM recommend that PCORI support research that studies the dangers and costs of opioids compared to acupuncture treatments, as well as comparative effectiveness research, and other trending research nuances.

<sup>8</sup> Centers for Medicare and Medicaid Services (CMS). Decision Memo for Acupuncture for Chronic Low Back Pain (CAG-00452N). <https://www.cms.gov/medicare-coverage-database/details/nca-decision-memo.aspx?NCAId=295>.

<sup>9</sup> <https://www.triwest.com/en/vapc3-provider/Quick-Reference-Guides/Chiropractic-Care.pdf>.

<sup>10</sup> <https://www.jointcommission.org/standards/r3-report/r3-report-issue-11-pain-assessment-and-management-standards-for-hospitals/>.

<sup>11</sup> <https://www.integrativepractitioner.com/practice-management/news/association-attorneys-general-urges-insurers-cover-integrative-pain-strategies>.

<sup>12</sup> <https://bmjopen.bmj.com/content/10/1/e028633corr1>.

*PCORI's Unique Contribution: The ASA and the NCCAOM strongly recommend that PCORI support study designs with broader inclusion criteria for integrated pain-management studies.*

**Challenge:** The ASA and the NCCAOM stress their concerns with research programs that exclude effective pain-management strategies by using narrow randomized-control trials (RCT) inclusion criteria for reviewing evidence. While many pain-management practices—such as acupuncture—have existed for centuries, their literature bases for standardized research are limited.

Current acupuncture-specific literature is limited because many studies do not meet standard criteria for systematic, evidence-based research or “high quality” RCTs. This criterion creates glaring evidence and knowledge gaps. While case studies generated by thousands of practitioners exist, they are not accepted as high-quality evidence.

This is largely because acute pain/conditions are not documented in accordance with current research standards due to the lack of funding for acupuncture research, frequent low cohort numbers, and/or poorly constructed studies. Additionally, acupuncture treatment and control-group interventions in parallel-group randomized acupuncture trials are not always precisely reported.

In addition, due to the very nature of the personal interactions inherent in delivering acupuncture treatment, the standard Randomized Double Blind Control Trial suitable for pharmaceuticals and other medical interventions does not fit well for acupuncture research. Fitting acupuncture into standardized research protocols can reduce its effectiveness, creating a misleading false negative and limiting the body of evidence that is necessary to support its acceptance as a legitimate form of medicine.

This is in part because integrated pain management can be inherently difficult to measure. An RCT-focus excludes many high quality studies that provide a more comprehensive and robust evidence base for integrated pain-management practices. Thus, evaluating pain-management techniques' effectiveness just with RCTs excludes applicable evidence and places more weight on perception.

For example, the U.S. Centers for Disease Control and Prevention's current guidelines related to opioids and chronic pain dramatically undervalued evidence-based, non-pharmacologic, pain-management alternatives. While entities within the U.S. Department of Health and Human Services have acknowledged the detrimental impact opioid misuse and overuse has had on the United States, the ensuing national conversation overlooks the role non-pharmacologic treatments have in mitigating this crisis—possibly because of evidence-exclusion criteria.

What does Success Look Like?: Existing literature shows that acupuncture is safe, effective, and reliable, but more research—driven by acupuncturists—is necessary to continue to develop this evidence base to increase access to acupuncture, and enable acupuncture to take a bigger role in integrated pain-management strategies.

## **2. Enhance Infrastructure to Accelerate Patient-Centered Outcomes Research**

**PCORI Goal: Enhance the infrastructure that facilitates patient-centered outcomes research to drive lasting improvements in health and transformation of both the research enterprise and care delivery.**

*Opportunity: The ASA and NCCAOM recommend that PCORI focus on modalities that have emerging evidence bases—such as acupuncture—to help strengthen its infrastructure to accelerate patient-centered outcomes research.*

Challenge: The studies cited in Appendix A demonstrate acupuncture’s strong evidence base for many healthcare and wellness applications. While the high-quality studies show that acupuncture is a viable method for an array of modalities, its reach is limited due to the lack of acupuncture-focused studies. As a result, acupuncture’s universal recognition as a viable health and wellness application is limited due to the lack of funding for acupuncture-specific research.

PCORI’s Unique Contribution: PCORI could be instrumental in increasing acupuncture-specific research by initiating and funding more specific and thorough acupuncture studies that include—and are led by—NCCAOM-certified, licensed, acupuncturists.

*To increase patient-centered outcomes, the ASA and the NCCAOM recommend additional research into program-structure and implementation practices within systems to understand what can optimize care delivery, and to identify components and factors that affect adherence.*

Opportunity: Research leading to program standardization and delivery can help facilitate a general understanding of the best combinations of interventions for integrative health. In an attempt to improve research standards, an international group of experienced acupuncturists and researchers developed STRICTA guidelines (STAndards for Reporting Interventions in Controlled Trials of Acupuncture) to increase the overall quality of acupuncture research. Funding for this standard of acupuncture-specific research remains a challenge.

PCORI's Unique Contribution: The ASA and the NCCAOM encourage PCORI to delve further into acupuncture research to discover a stronger evidence base for acupuncture's effects on health and wellness by initiating more specific and thorough acupuncture studies that include—and are led by—NCCAOM-certified, licensed acupuncturists.

*The ASA and the NCCAOM recommend that PCORI fund more population-research studies as well as studies focused on older populations.*

Both are warranted in future designs. Specific populations could include pregnant and breast-feeding women, children, patients with sickle-cell anemia, chronic-disease management or complex medical diagnoses, as well as historically under-resourced populations.

*The ASA and the NCCAOM recommend that PCORI ensure that all future research (for acupuncture and other modalities) trials clearly document adverse reactions and the methodology for reporting adverse reactions.*

PCORI's Unique Contribution: Given the significant differences in training acupuncturists receive compared to other providers who administer acupuncture treatments (e.g. length of time and depth of training), studies should explicitly note the credentials of those who deliver treatment for consumer safety and for research-study integrity. Future PCORI-funded studies related to acupuncture should either require an NCCAOM-certified and licensed acupuncturist to design, lead, and/or take a principle role in the study, or note the different outcomes for acupuncture trials by the provider type (e.g. acupuncturists, nurse, physical therapist, chiropractor).

Opportunity: *The ASA and the NCCAOM also recommend research to demonstrate acupuncture's effect on health-related outcomes to help PCORI enhance its infrastructure and accelerate patient-centered outcomes research.*

PCORI's Unique Contribution:

- To increase the use of real-world data, such as health records or public health data, for research, the ASA and the NCCAOM recommend that PCORI enable pilot studies that would create a HIPAA-compliant electronic database for data about treatments for various syndromes and herbal treatments (similar to the CDC's COVID-19 database).<sup>13</sup>
- To increase the diversity of individuals and communities who lead or partner in research, the ASA and the NCCAOM recommend that PCORI initiate the following:

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<sup>13</sup> <https://www.cdc.gov/library/researchguides/2019novelcoronavirus/databasesjournals.html>.

- Provide specific grants or training opportunities for practitioners to pursue research.
- Allocate funds to develop and evaluate research models that better fit acupuncture and individualized medicine (noting that randomized double-blind trials are inherently biased against acupuncture and are impossible in real-world settings).
- Engage populations that are historically under-represented in research by partnering with institutions/organizations (e.g. Historically Black Colleges and Universities, Reservations and/or First Nations governance, community organizations/facilities that provide services to under-resourced and historically disenfranchised groups).
- Design and fund mentorship programs to increase the number and diversity of individuals and communities.
- To develop policies and practices that help individuals work together and learn from each other, the ASA and the NCCAOM recommend that PCORI help facilitate the following:
  - An easily adaptable template or model for (leaders of) different communities to assess and identify challenges, as well as strategize and implement programs/policies that suit their communities.
  - Electronic networks to help disseminate research and best practices, especially in lower resourced communities.
  - Studies that could demonstrate acupuncture's quality and safety to encourage payers to cover acupuncture services.

What Does Success Look Like?: An increase in acupuncture-specific research for a variety of applications that include, and are led by, NCCAOM-certified, licensed, acupuncturists that would generate acupuncture-specific data, led by those most qualified to perform and study acupuncture.

### **3. Advance the Science of Dissemination, Implementation, and Health Communication**

**PCORI Goal: Advance the scientific evidence for and the practice of dissemination, implementation, and health communication to accelerate the movement of comparative clinical effectiveness research results into practice**

Opportunity: Increased education, awareness, and information sharing. The ASA and the NCCAOM recommend that PCORI establish a clear vision for, and messaging around, evidence-based research that can readily reach practitioners, patients, and the public. The ASA and the NCCAOM recommend that PCORI do the following:

- Enhance methods for publicizing, informing, and explaining PCORI-funded study results via PCORI's website, fact sheets, short videos, webinars, etc.
- Explore and implement research opportunities to study and assess the safety and efficacy of complementary health approaches that include acupuncture in non-clinical settings, such as community and employer-based wellness programs.
- Reinstate and develop specific efforts to educate the public about integrative health options—such as acupuncture—and help individuals incorporate integrative health components into their medical management and overall wellness.
- Consider NCCAOM-certified, licensed acupuncturists in future calls for PCORI advisory panels, task forces, etc.
- Generate consistent consumer-use studies for acupuncture to measure and benchmark its short- and long-term effects.
- Measure the growth of acupuncture services as the U.S. healthcare system embraces integrative medicine.
- Address cost effectiveness of integrative-health approaches as practiced and their associated cost-avoidance in hospital systems.
- Develop methods and approaches to enhance public understanding of basic scientific concepts and biomedical research.
- Encourage research that provides resources that patients can effectively use to navigate the healthcare system, such as questions to ask their healthcare team, lists of available practitioners, and appropriate treatment options.

#### **4. Achieve Health Equity**

**PCORI Goal: Expand stakeholder engagement, research, and dissemination approaches that lead to continued progress toward achieving health equity in the United States.**

*The ASA and the NCCAOM recommend that PCORI support research initiatives that can help provide data that payers need to cover safe and effective care.*

Opportunity: Such research could focus on the financial viability—and sustainability—of different integrative medical-business models in small clinics, larger hospital systems, Federally Qualified Health Centers, etc. PCORI could also help develop studies that examine acupuncture's effect in detox clinics. This would generate data on the effects of using acupuncture for pain management for detox, in addition to current models that use counseling and group therapy as part of medication management.

Challenge: Currently many addiction-support services must use only medication management (via the 12-step model), which gives patients little choice in identifying the most effective treatment methods.

PCORI's Unique Contribution: Facilitating research funding for programs that specifically address representation and access issues. In addition, funding more “culturally tailored” programs for historically underserved and under-resourced populations may also close the equity gap.<sup>14,15</sup> The ADDOPT-2 Trial (Acupuncture to Decrease Disparities of Pain Treatment), previously PCORI-funded, examined the feasibility, acceptability and effectiveness of group visits for chronic pain in an underserved and ethnically diverse population in the Bronx.<sup>16</sup>

What Does Success Look Like?: More data derived from diverse patient populations to help increase payer recognition and coverage decisions and to help increase awareness to acupuncture as an affordable and effective option among all populations.

## **5. Accelerate Progress Toward an Integrated Learning Health System**

**PCORI Goal: Foster actionable, timely, place-based, and transformative improvements in patient-centered experiences, care provision, and ultimately improved health outcomes through collaborative, multisectoral research to support a health system that serves the needs and preferences of individuals.**

*The ASA and the NCCAOM recommend that PCORI support research that generates data on integrated-care models so more individuals can receive thoughtful, coordinated care that best suits their needs.*

Opportunity: The ASA and the NCCAOM recognize the critical role that those within the acupuncture field have in designing, leading, and conducting research. Encouraging and equipping clinicians (e.g. acupuncturists) to conduct research will facilitate critical data-collection, provide valuable insight into health and wellness treatments among diverse patient populations, and facilitate more interdisciplinary relationships at individual and institutional levels.

This focus complements efforts to encourage translational research into how various psychosocial systems interact—especially with regard to pain-management strategies.

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<sup>14</sup> Chao MT, Schillinger D, Nguyen U, Santana T, Liu R, Gregorich S, Hecht FM. A randomized clinical trial of group acupuncture for painful diabetic neuropathy among diverse, safety net patients. *Pain Medicine*, 2019, 20(11): 2292-2302. doi: 10.1093/pm/prnz117 PMID: PMC7963203.

<sup>15</sup> Ho E, Pak S, Leung G, Xu S, Yu C, Hecht FM, Jih J, Chao, MT. Pilot cluster randomized controlled trial of integrative nutritional counseling versus standard diabetes self-management education for Chinese Americans with type 2 diabetes. *Health Equity*, 2020;4:410-420. <http://doi.org/10.1089/heq.2020.0002>.

<sup>16</sup> McKee, M Diane et al. “The ADDOPT study (Acupuncture to Decrease Disparities in Outcomes of Pain Treatment): feasibility of offering acupuncture in the community health center setting.” *Journal of alternative and complementary medicine (New York, N.Y.)* vol. 18,9 (2012): 839-43. doi:10.1089/acm.2011.0193

Research could establish and help implement patient-centered multi-faceted, multi-specialty models to help treat complex diseases and enable patients to help identify treatment methods that work best for them.

The Veterans Health Administration's Whole Health model, for example, provides individualized care to each patient by considering the individual's values, needs, goals to not only provide treatment, but to provide a personalized health and wellness plan.<sup>17</sup>

In 2016, Vermont's Medicaid program launched a \$200,000 pilot project to assess acupuncture's effect as an adjunct therapy for treating chronic pain. Study results showed that those who self-select acupuncture to treat chronic pain "would benefit physically, functionally, psycho-emotionally and occupationally."<sup>18</sup>

To help expand this model to other populations, research is necessary to ensure those within every population have access to what matters to them in health and wellness. Thus, more funding is needed to expand evidence-based services such as acupuncture to ensure that more individuals can access them.

PCORI's Unique Contribution: Additional studies could also provide physicians, nurse practitioners, and other healthcare practitioners awareness, education, and pathways to acupuncture and other evidence-based, whole-person/wellness services. This could include targeted education on services for wellness and proactive health, as well as multifaceted strategies for creating and disseminating educational materials to patients, practitioners, payers, and hospitals. The Florida Board of Medicine's [Non-Opioid Alternatives Pamphlet](#) is an example of effective public-education communications.

### What Does Success Look Like?

To help individuals to make more informed decisions about their health and wellness, the ASA and the NCCAOM recommend that PCORI:

- Dedicate resources to communicate data derived from studies that could provide more information to students on career opportunities within integrative-health fields.
- Increase acupuncture-specific research to further strengthen its evidence-base to enable more individuals to enter the workforce, as increased access would heighten demand for acupuncture services.

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<sup>17</sup> <https://www.va.gov/wholehealth>.

<sup>18</sup> <https://legislature.vermont.gov/assets/Legislative-Reports/DVHA-Acupuncture-Pilot-Outcomes-Report-FINAL.pdf>.

## Conclusion

When qualified healthcare professionals deliver acupuncture, the treatment is a safe, cost-effective, and evidence-based option for mitigating chronic pain and reducing opioid use. Acupuncture also offers promising secondary benefits that may further boost the health of seniors, as well as potentially increasing satisfaction with the Medicare program.

The ASA and the NCCAOM are grateful for the opportunity to respond to PCORI's 2022-2032 National Priorities' draft and look forward to opportunities to enhance PCORI's research protocol for acupuncture through research.

## ASA and NCCAOM Signatures



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Chair, American Society of Acupuncturists



Mina M. Larson, M.S., MBA, CAE  
Chief Executive Officer, NCCAOM®

## Appendix A

### 1. Acute back pain (including back pain with radiculopathy)

Please note there are comparatively few studies for acute pain. There have been some pilot acupuncture programs for Emergency Room Departments to treat acute pain. Continued emphasis on funding research in these categories is warranted given the pattern of initial findings demonstrating acupuncture as a viable, cost-effective option to treat acute pain without the potential for addiction or abuse.

Acute-back pain in pregnancy is one of the few categories addressed for special-populations data.

- Ee, C. C., Manheimer, E., Pirotta, M. V., & White, A. R. (2008). Acupuncture for pelvic and back pain in pregnancy: a systematic review. *American journal of obstetrics and gynecology*, 198(3), 254-259.
- Kvorning, N., Holmberg, C., Grennert, L., Åberg, A., & Åkeson, J. (2004). Acupuncture relieves pelvic and low-back pain in late pregnancy. *Acta obstetrica et gynecologica Scandinavica*, 83(3), 246-250.
- Wedenberg K, Moen B, Norling A. A prospective randomized study comparing acupuncture with physiotherapy for low-back and pelvic pain in pregnancy. *Acta Obstet Gyn Scan*. 2000;79:331–5.
- Glauser, Jonathan & Myslenski, Maya & Money, Sarah. (2019). Acupuncture in the Emergency Management of Painful Conditions. *Current Emergency and Hospital Medicine Reports*. 7. 10.1007/s40138-019-00193-2.
- Liu, Y. T., Chiu, C. W., Chang, C. F., Lee, T. C., Chen, C. Y., Chang, S. C., ... & Lo, L. C. (2015). Efficacy and safety of acupuncture for acute low back pain in emergency department: a pilot cohort study. *Evidence-Based Complementary and Alternative Medicine*, 2015.
- Chia, K. L., Lam, R. P. K., Lam, C. K., & Tsui, S. H. (2018). Acupuncture in the emergency department: a systematic review of randomised controlled trials. *Acupuncture in Medicine*, 36(3), 183-192.
- Grissa, M. H., Baccouche, H., Boubaker, H., Beltaief, K., Bzeouich, N., Fredj, N., ... & Nouira, S. (2016). Acupuncture vs intravenous morphine in the management of acute pain in the ED. *The American Journal of Emergency Medicine*, 34(11), 2112-2116.

- Adam S. Reinstein, Lauren O. Erickson, Kristen H. Griffin, Rachael L. Rivard, Christopher E. Kapsner, Michael D. Finch, Jeffery A. Dusek, Acceptability, Adaptation, and Clinical Outcomes of Acupuncture Provided in the Emergency Department: A Retrospective Pilot Study, *Pain Medicine*, Volume 18, Issue 1, January 2017, Pages 169–178, <https://doi.org/10.1093/pm/pnv114>
- Crawford, Paul., Penzien, Donald B., and Coeytaux, Remy. (2017). Reduction in Pain Medication Prescriptions and Self-Reported Outcomes Associated with Acupuncture in a Military Patient Population. *Medical Acupuncture* 2017 29:4, 229-231 <https://doi.org/10.1089/acu.2017.1234>
- Wang SM, Dezinno P, Lin EC, et al. Auricular acupuncture as a treatment for pregnant women who have low back and posterior pelvic pain: a pilot study. *Am J Obstet Gynecol.* 2009; 201(3):271.e271–279.
- Hasegawa, T. M., Baptista, A. S., de Souza, M. C., Yoshizumi, A. M., & Natour, J. (2014). Acupuncture for Acute Non-Specific Low Back Pain: A Randomised, Controlled, Double-Blind, Placebo Trial. *Acupuncture in Medicine*, 32(2), 109–115. <https://doi.org/10.1136/acupmed-2013-010333>

## 2. Acute neck pain (including neck pain with radiculopathy)

- Grissa, M. H., Baccouche, H., Boubaker, H., Beltaief, K., Bzeouich, N., Fredj, N., ... & Nouira, S. (2016). Acupuncture vs intravenous morphine in the management of acute pain in the ED. *The American Journal of Emergency Medicine*, 34(11), 2112-2116.
- Adam S. Reinstein, Lauren O. Erickson, Kristen H. Griffin, Rachael L. Rivard, Christopher E. Kapsner, Michael D. Finch, Jeffery A. Dusek, Acceptability, Adaptation, and Clinical Outcomes of Acupuncture Provided in the Emergency Department: A Retrospective Pilot Study, *Pain Medicine*, Volume 18, Issue 1, January 2017, Pages 169–178, <https://doi.org/10.1093/pm/pnv114>
- Trinh K, Graham N, Gross A, Goldsmith CH, Wang E, Cameron ID, Kay TM. Acupuncture for neck disorders. *Cochrane Database of Systematic Reviews* 2006, Issue 3. Art. No.: CD004870. DOI: 10.1002/14651858.CD004870.pub3.
- Davis, R. T., Badger, G., Valentine, K., Cavert, A., & Coeytaux, R. R. (2018). Acupuncture for chronic pain in the Vermont Medicaid population: a prospective, pragmatic intervention trial. *Global advances in health and medicine*, 7, 2164956118769557.

- H.-Y. Kwak, J.-I. Kim, J.-M. Park et al., “Acupuncture for Whiplash-associated disorder: a randomized, waiting-list controlled, pilot trial,” *European Journal of Integrative Medicine*, vol. 4, no. 2, pp. e151–e158, 2012.
- Stuart, Sam, Armstrong, Michael, Sewell, Jennifer, Dixon, Cheryl and Morris, Rosie (2019) Acupuncture for whiplash-associated disorder following a road traffic collision: a physiotherapy service evaluation. *Acupuncture in Medicine*.
- Fattori, B., Ursino, F., Cingolani, C., Bruschini, L., Dallan, I., & Nacci, A. (2004). Acupuncture treatment of whiplash injury. *Int Tinnitus J*, 10(2), 156-160.

### **3. Other musculoskeletal pain. Musculoskeletal pain not otherwise included in KQ1 or KQ2 (including fractures)**

- Yuan, Q. L., Wang, P., Liu, L., Sun, F., Cai, Y. S., Wu, W. T., ... Zhang, Y. G. (2016). Acupuncture for musculoskeletal pain: A meta-analysis and meta-regression of sham-controlled randomized clinical trials. *Scientific reports*, 6, 30675. doi:10.1038/srep30675
- Zhen Zheng, Stephen Gibson, Robert D Helme, Yanyi Wang, David Shao-Chen Lu, Carolyn Arnold, Malcolm Hogg, Andrew A Somogyi, Cliff Da Costa, Charlie Chang Li Xue, Effects of Electroacupuncture on Opioid Consumption in Patients with Chronic Musculoskeletal Pain: A Multicenter Randomized Controlled Trial, *Pain Medicine*, Volume 20, Issue 2, February 2019, Pages 397–410, <https://doi.org/10.1093/pm/pny113>

### **4. Peripheral neuropathic pain (related to herpes zoster and trigeminal neuralgia)**

- Garrido-Suárez BB, Garrido G, Menéndez AB, et al. Combination of low frequency electroacupuncture plus subdissociative doses of ketamine in post-herpetic neuralgia patients. A pilot study. *J Pharm Pharmacogn Res*. 2017; 5(6):381–393.
- Ursini T, Tontodonati M, Manzoli L, et al. Acupuncture for the treatment of severe acute pain in herpes zoster: results of a nested, open-label, randomized trial in the VZV pain study. *BMC Complement Altern Med*. 2011;11:46 [published Online First: 2011/06/07]. doi:10.1186/1472-6882-11-46
- Takahashi, H. (2007). Effects of scalp acupuncture and auricular therapy on acute herpetic pain and pos-therpetic neuralgia: a case series. *Medical Acupuncture*, 19(2), 113-120.

## 5. Postoperative pain after discharge

- Wu, M. S., Chen, K. H., Chen, I. F., Huang, S. K., Tzeng, P. C., Yeh, M. L., ... Chen, C. (2016). The Efficacy of Acupuncture in Post-Operative Pain Management: A Systematic Review and Meta-Analysis. *PloS one*, 11(3), e0150367. doi:10.1371/journal.pone.0150367
- Sun Y., Gan T.J., Dubose J.W., Habib A.S.(2008). Acupuncture and related techniques for postoperative pain: A systematic review of randomized controlled trials. *British Journal of Anaesthesia*, 101 (2), pp. 151-160.

## 6. Dental Pain (surgical and nonsurgical after discharge)

- Lao L, Bergman S, Hamilton GR, Langenberg P, Berman B. Evaluation of Acupuncture for Pain Control After Oral Surgery: A Placebo-Controlled Trial. *Arch Otolaryngol Head Neck Surg*. 1999; 125(5):567–572. doi:10.1001/archotol.125.5.567
- Ernst, E., & Pittler, M. H. (1998). The effectiveness of acupuncture in treating acute dental pain: a systematic review. *British dental journal*, 184(9), 443-447.
- de Matos, Nuno M.P. et al.(Sept 2019).Evaluating the Effects of Acupuncture Using a Dental Pain Model in Healthy Subjects – A Randomized, Cross-Over Trial. *Journal of Pain*. <https://doi.org/10.1016/j.jpain.2019.08.013>

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