



EAST MEETS WEST

Tips for Introducing Acupuncture to Biomedical Providers (Pt. 1)

Stephanie Gregory, LAc, MAOM, Dipl. OM (NCCAOM)

As acupuncturists and East Asian medicine providers continue to elevate our professional profile, we need to learn how to speak the common language of conventional biomedicine to network with other providers in the allopathic, osteopathic and allied health professions.

As a licensed acupuncturist within the Veterans Health Administration, I have been offered the wonderful opportunity to expand our medicine's reach into the veteran community. As part of my role within the VA, I frequently give talks about acupuncture and EAM to both patients and fellow providers. Here are some tips and lessons I've learned from talking with curious biomedical providers who have absolutely no knowledge about what we do as acupuncturists or what we have to offer to our patients and the medical community.

The most frequent questions I get from fellow medical doctors and other health providers are the following:

- How does acupuncture work?
- What does acupuncture treat?
- What should patients expect from treatment?

Question #1: How Does Acupuncture Work?



The most current research into acupuncture mechanisms and efficacy has greatly expanded in scope and improved in quality over the past several years. Most conventional medical providers know that acupuncture has been demonstrated to be effective for certain conditions, as evidenced by the American College of Physicians' clinical practice guidelines for noninvasive treatments for back pain.¹ However, few understand the broad scope of changes that acupuncture can effect on the body. These effects can be summarized by local tissue effects, adjacent effects in peripheral nerves, and systemic effects in the central nervous system and throughout the body.

There are numerous local tissue effects incited with the insertion and stimulation of an acupuncture needle. Just a few of the key changes that occur locally with insertion of the needle include a low-grade immune response inciting release of mast cells, platelets and red blood cells in the area, along with stimulation of release of adenosine, nitric oxide, prostaglandins, histamine and substance P.²

Adenosine release causes an anti-nociceptive effect and supports local cellular repair processes. The release of substance P and NO causes local vasodilation, increasing circulation to the immediate area. The low-grade, pro-inflammatory response to acupuncture needling also stimulates a wound healing response, as evidenced by increased glucose uptake by skeletal muscle following electroacupuncture.²

Acupuncture needle insertion and manipulation has also been shown to affect a response by connective tissues, resulting in mechano-transduction and cell signaling based on the needle interacting with collagen fibers.³ Furthermore, the interaction of the needle rotation with tugging on connective tissue fibers results in fibroblast spreading, with implications for connective tissue

remodeling and sensory afferent signaling coming from the connective tissue itself.⁴

Additionally, there are adjacent signaling effects which occur from acupuncture that have been demonstrated to play a role in the gate control theory of pain. The release of inflammatory mediators mentioned above stimulates a peripheral nervous system response through the afferent nerve fibers. This stimulation of A α , A β , A δ or C fibers varies by technique used, manual vs. e-stim, resulting in a segmental analgesic response that activates descending anti-nociceptive signals via the dorsal horn of the spinal cord.² Stimulation of these fibers additionally trigger the release of endogenous opioids and neurotransmitters, including serotonin, norepinephrine, GABA, glycine and dopamine,² resulting in the calm sense of euphoria that patients often report following acupuncture treatment! The release of neurotransmitters will not only cause local and peripheral tissue changes, but will also affect the brain with greater impacts that will ripple throughout the body.

Acupuncture has also been demonstrated to lower heart rate and modulate the autonomic nervous system by lowering sympathetic tone and increasing parasympathetic tone,⁵ with implications for treating chronic pain and other conditions in which chronic stress plays a significant role, including the cardiovascular system, gastric motility and metabolism, and the endocrine system through hormone regulation.

Brain imaging studies have demonstrated acupuncture stimulation of the hypothalamus with implications for regulation of the hypothalamus-pituitary-adrenal axis and restoration of homeostasis, along with downregulation of limbic structures and modulation of the prefrontal cortex with implications for reducing hypervigilance, hyperarousal and emotional lability.² Functional MRI and PET imaging studies have also shown acupuncture-induced activation of the somatosensory and motor cortices corresponding with acupuncture point location, with implications for treating chronic pain, neuropathic pain and conditions affecting mobility, including post-stroke sequelae, palsies and more.²⁻³

Question #2: What Does Acupuncture Treat?

Inevitably, the follow-up question is, what has acupuncture been shown to be effective for treating? There have been some wonderful large-scale compilation studies published within the past five years compiling the latest meta-analysis and systematic reviews exploring acupuncture as a treatment for a variety of different conditions, summarized in "acupuncture evidence maps."

The Department of Veterans Affairs Health Services Research & Development Service (HSR&D) compiled English-language systematic reviews focusing on acupuncture published between 2005 through March 2013 and published the results in the VA's Evidence Map of Acupuncture.⁶ This evidence map summarizes acupuncture research for several conditions into three large categories: pain, wellness and mental health.

The main takeaway from the evidence map is the three bubble plots reviewing acupuncture systematic reviews into 21 distinct pain conditions (p.10), 20 conditions related to wellness (p.15), and nine clinical conditions related to mental health (p. 19).

Based on findings, acupuncture has been demonstrated to have a positive effect on chronic pain, migraines and headaches with a large body of evidence for those three areas, with evidence of a

potential positive effect for osteoarthritis, cancer pain, dysmenorrhea, plantar foot pain, TMJ pain, insomnia, restless legs, post-operative nausea and vomiting, anxiety, depression, PTSD and more.

Of course, as EAM providers, we know acupuncture to be effective for the aforementioned conditions and many more based on our clinical experience. However, the VA Evidence Map of Acupuncture has been useful for broadening the scope of awareness of quality research into acupuncture that is supported by such a large, well-respected organization. It served as the backbone for justifying the inclusion of licensed acupuncturists as full-time general schedule (GS) employees within the Veterans Health Administration, and for offering acupuncture more broadly to veterans through their Community Care programs.

Editor's Note: Pt. 2 of this article (January 2021) continues Stephanie's discussion of how to answer the question of "What does acupuncture treat?" for biomedical providers and answers the third question, "What should patients expect from an acupuncture treatment?" Complete references supporting the citations in both parts accompany pt. 2.

DECEMBER 2020