

From Falx to Fingertips:
An Exercise in Mind-Body Awareness Through Acupuncture
Aye Mon Win

The room was dimly lit. Quintessential pan flute notes surrounded me. With a pillow beneath my head, one beneath my knees, sheets segmentally layered to allow intermittent access to my skin, and a therapeutic heat lamp over my belly, the table was more comfortable than any OMT or massage table I had laid upon. Repeated assurance of my comfort and a few questions about my favorite foods later—either as distracting small talk, intentional analysis, or more likely both—the tiny needles were all in place across the front side of my body. The helices of my outer ears, my inguinal region, and my feet seemed to be the most targeted. Each needle's placement was a momentary fine prick. After two-and-a-half years as an osteopathic medical student learning osteopathic manual manipulation (OMM), two-and-a-half years of desensitization from classmates' practice treating areas as sensitive as my armpits, I was surprised by moments of ticklishness.

Once the needles were in their particular places for my particular chief complaints and an egg timer was set, the doctor left the room for the self-healing to take place. I became more acutely aware of my pulse. Under each needle, I felt as though a channel was opening up, allowing for my pulse to increase in strength, delivering more oxygen and nutrients to the surrounding tissues. It began in my fingertips, which felt as though they were engorging. My awareness of these foci of dilation shifted from location to location. The foci grew in size. My awareness now shifted from the subcutaneous tributaries to the profound beats of the superior gluteal artery beneath me and, depending on which side my neck was turned to, the internal carotid arteries feeding my cognition. A deepened awareness of my pulse was something I have experienced during yoga savasana and meditation, or while laying on my left side to fall asleep and being distracted by my PMI. However, I had never experienced it to this extent or acuity.

The sensations of tissue opening up or swelling and regressing instantly reminded me of the way it feels to assess the cranial rhythmic impulse (CRI). The meninges (dura mater, arachnoid mater, and pia mater), falx cerebri, and tentorium cerebelli are membranes that cover and protect the brain, and thus move with the underlying cerebrospinal fluid (CSF). According to cranial OMM, the CRI can be palpated, and it can be manipulated with gentle touch to increase CSF flow. I thought perhaps the ebbing and flowing I felt were tissue texture changes in my fascia. At the least, it could have been muscle tissue or fascial release allowing for increased blood flow in the same way that can be palpated during balanced ligamentous tension (BLT) and counterstrain (CS) OMM: the coveted “therapeutic pulse.”

In a vastly simplified and shrunken nutshell, perhaps offensively so, I offer the explanation that acupuncture seeks to improve the flow and quality of qi. Qi, our life energy, travels through the body through channels known as meridians. After my

treatment, I learned that the sensation of fullness, heaviness, or tingling where a needle is applied is known as De Qi.ⁱ

Because of the individualized nature of treatment and an entirely different system and language of understanding the body, it is inherently difficult to place acupuncture into Western paradigms of anatomy, physiology, and pathology, and subsequently to conduct randomized controlled trials. However, according to UpToDate, acupuncture (but also sham acupuncture) have been shown by “well-designed clinical trials” to be more effective than control interventions for low back pain, knee osteoarthritis, migraine, allergic rhinitis, and menopausal hot flashes.ⁱⁱ

So how does it work? Functional magnetic resonance imaging (fMRI) has shown that acupuncture affects endogenous opioid signaling.ⁱⁱⁱ While all subsets of opioid peptides (mu-opioid, kappa-opioid, enkephalin, and beta-endorphin) are increased during acupuncture treatment, beta-endorphin levels are the highest.^{iv} Another mechanism of analgesia is the inhibition of excitatory glutamergic pathways with stimulation of inhibitory GABAergic pathways.^v The primary somatosensory cortex is the site of initial pain processing that combines discriminative touch and proprioceptive information, allowing localization of pain.^{vi} Bilateral changes in activation of primary and secondary somatosensory cortices, two areas of the brain that are active during pain experiences, have been visualized on fMRI.^{vii} In our current crisis of opioid over-prescription, addiction, and overdose, I hope to see health care practitioners and patients considering alternatives to pain management that take advantage of our endogenous opioid pathways.

Increased local blood flow, such as what I believe I was experiencing, has been demonstrated in rats by measuring mean blood flow.^{viii} Measured increases in extracellular ATP and ADP via purinergic (P₂) signaling were thought to be partially responsible for the increased blood flow. In other studies, increased local P₂ signaling in connective tissue at the site of acupuncture needles led to cell-mediated tissue relaxation.^{ix} P₂ receptors also exist in the CNS where they modulate neurotransmitter release.^x

The egg timer went off. Like dinner in the oven, my anterior side and the channels below, throughout, and within were addressed and it was time to take the toothpicks out and flip. The posterior approach involved not just needles but suction cupping to increase blood flow to what were deemed to be my more problematic muscular regions: peri-scapular and paraspinal. A very gentle shiatsu massage graced my shoulders and back and I felt chills and tissue release into my neck. Admittedly, I fell asleep.

Relaxation, mind-body awareness, tension release, and improved blood flow were subjective outcomes I experienced during acupuncture. I believe that these outcomes can cause downstream effects of improved cardiovascular health, immune function, and mental health. Is acupuncture necessary to achieve these outcomes? No. It is simply one intervention, with its own molecular mechanisms of action,

which *can* be used to augment health. Yoga, meditation, OMM, massage therapy, lifestyle modifications, and pharmacologic agents may all have similar endpoints. Although physicians do need to delineate the “best” therapeutic intervention or the first-line agent, we also understand that each patient varies both in their cellular responses and in what they can commit to incorporating into their lives. One of our goals as health practitioners should be to increase the number of tools we have in our toolbox, so that we can offer patients—and ourselves—more customized treatment plans that comprehensively address wellness.

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ⁱⁱⁱ “Current Indications of Acupuncture.” *The Medical Round Table General Medical Education.* 1.4 (2012): 335-344

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^v Gao, P., Gao, X., Fu, T., Xu, D. and Wen, Q. “Acupuncture: Emerging evidence for its use as an analgesic.” *Experimental and Therapeutic Medicine.* 9.5 (2015): 1577-1581

^{vi} “Neuroscience Online: an electronic textbook for the neurosciences.” Department of Neurobiology and Anatomy at The University of Texas Medical School. <http://neuroscience.uth.tmc.edu/toc.htm>

^{vii} Lin, L., Skakavac, N., Lin, X., Lin, D., Borlongan, M., Borlongan, C. and Cao, C. “Acupuncture-induced analgesia : the role of microglial inhibition. *Cell Transplantation.* Early e-pub (2016)

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