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Acupuncture in Primary Care

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Synopsis

Acupuncture is an ancient traditional Chinese medical therapy that is used widely around the world. When practiced by a certified provider, it is safe and often perceived as calming and relaxing for patients. Animal and human studies have found a physiological basis for acupuncture needling in that it affects the complex central and peripheral neuro-hormonal network. Although it is unclear whether acupuncture is beneficial over sham/placebo acupuncture, acupuncture care yields clinically relevant short- and long-term benefits for low back pain, knee osteoarthritis, chronic neck pain, and headache. The integration of acupuncture into a primary care setting also appears to be cost-effective. Furthermore, the practice of acupuncture in primary care involves rigorous training, financial discipline, and art of communication. When it is done correctly, acupuncture proves to be beneficial for both patients and providers.

Keywords

Acupuncture/history/standards; Acupuncture Therapy/adverse effects; China; Evidence-Based Medicine; Meta-Analysis; Primary Care

General Introduction

Acupuncture is a traditional Chinese medical therapy that uses hair-thin metal needles to puncture the skin at specific points on the body to relieve pain and promote wellbeing. In this paper we provide a historical and philosophical overview of acupuncture and describe its current use in the United States. We will then synthesize the basic scientific theory of acupuncture and present recent clinical evidence of how acupuncture may be used for a broad category of diseases with a specific focus on conditions common to a primary care clinic, including low back pain, osteoarthritis, neck pain and headache. Furthermore, we will discuss the practical issues concerning the integration of acupuncture into primary care to create coordinated, patient-centered care.

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A Case Presentation

Ms. Smith (not real name) is an 82-year-old woman with a history of hypertension and high cholesterol presented with six months of low back pain. She denied any acute onset of the pain. She described her pain as fairly constant, worse with standing and walking, relieved by sitting; however, prolonged sitting can make the pain worse as well. The pain is achy in nature and can travel down along her left buttock. Pain is described as 6 out of 10 on average and 10 out of 10 at worst. She lives by herself and described that the pain interfered with her sleep and made taking care of herself difficult. She has become frustrated by the pain and is anxious and depressed at the thought that she may lose her independence because of the pain. During the past several months, she was evaluated by her primary care physician (PCP), an orthopedic doctor, and a pain specialist. Her lumbar MRI showed mild lumbar stenosis at L4-L5 region. She has been taking naproxen but has only experienced mild relief. When she takes “too much,” her stomach became uncomfortable. She had a brief course of physical therapy, which did not seem to help much. She was recommended to have an epidural treatment; however, she is afraid of the “needle going into the back” and would want to try something non-invasive first. Her friends suggested trying acupuncture and she asked her PCP about it, who told her, “It probably won’t hurt, why don’t you give it a try?”

When Dr. Mao evaluated Ms. Smith, she appeared to be younger than her stated age and slightly anxious. She did not really understand nor hold any high expectations towards acupuncture; however, she was willing to give it a try as it has helped her friend before. She walked into the office with a cane; her range of motion of the lumbar area was poor with limited flexion. She had mild kyphosis with no bony tenderness on palpation. It took her a long time to climb up the examination table and find a comfortable position. Specific trigger points were palpated at 2 centimeters lateral to L5 area, around the sacral iliac joint as well as the left gluteal maximus region. Dr. Mao performed acupuncture for a total of seven sessions for her. She had minimal improvement during the first two treatments; however, she found the treatments calming and relaxing. When she returned for the fourth treatment, she felt “something definitely has changed.” She no longer needs the cane when walking, and the pain is never 10 out of 10 any more. At this point, Dr. Mao instructed her to see a physical therapist to strengthen her core muscle and then spaced her visits to every two weeks. With an additional three treatments, her pain decreased to 1 or 2 out of 10 and now minimally bothers her. Since acupuncture is not covered by her insurance, she and Dr. Mao agreed that she no longer needs to get acupuncture, will continue with physical therapy for strengthening, and will return as needed.

Historical Perspective

Acupuncture is part of the much larger system of healing called Traditional Chinese Medicine (TCM).¹ TCM is one of the oldest healing systems still currently utilized by a significant proportion of Chinese and world populations. In this medical paradigm, in addition to acupuncture, therapeutic options include herbs, diet, exercise, such as Tai Chi, massage (Tuina), Qi Gong (energy therapy) and various other forms. TCM focuses on promoting the “inner balance” or homeostasis of the individual within the larger external environment. Any distortion from such balance is viewed as “ill.” One of the many key concepts in TCM is “Qi,” a vital energy that circulates throughout the body in 14 channels called meridians. When the flow of Qi becomes obstructed, pain or illness occurs. Putting needles at specific acupuncture points along the meridian seeks to “open the channel” and promote the healthy flow of Qi and, with that, health is restored.^{1, 2}

The exact timing of when acupuncture was developed is highly debated, though some think it originated from over 5,000 years ago. The earliest source of systematic documentation of acupuncture theory is the Huang Di Nei Jing (the Inner Classic of the Yellow Emperor), which

dates back to the Han dynasty in the 2nd century BC.² Like many medical systems, acupuncture theory and practice have evolved over the years in China and in the West. Many similar but different schools emerged, such as the Japanese, Korean, and French Energetic styles of acupuncture. With the increasing understanding of neuroscience and anatomy, the practice of acupuncture in China, as well as in the West, has become more neuromuscular-based for some musculoskeletal and neurological conditions. In the US, the predominant practice of acupuncture is still TCM based.³

What is Acupuncture Like?

Regardless of the style of acupuncture, the practitioner often uses hair-thin metal needles, which he / she inserts in specific acupuncture points along the meridians or at the tender points, known in Chinese medicine as “Ashi” points. In the TCM style, the needles are often manipulated until either the physician perceives the needle being grabbed by the tissues or the patient experiences “De Qi,” a sensation described as a mixture of heaviness, soreness, distention, tingling, and numbness that can travel from one place to another.⁴ Patients will then lay still for about 20-40 minutes. During the acupuncture treatment, the practitioners often perform tongue and pulse diagnosis. Additionally, heat and electric stimulation may be applied to augment the needling sensation. Furthermore, the practitioners often offer advice on exercise, diet, life style modification, and prescription herbal treatments in addition to the acupuncture treatments.⁵ In large prospective studies, acupuncture has been found to be very safe with the most common side effects as needling pain, bruising, hematoma and dizziness. In very rare cases, severe tiredness, headache, and pneumothorax has been reported for needling the chest area.^{6, 7} Most patients perceive acupuncture as calming and relaxing.⁴ The course of acupuncture treatment typically includes 10 sessions, while many people require less and some need more.

Current State of Acupuncture Use in the United States

In 2002, approximately 2 million U.S. adults 18 or older had used acupuncture.⁸ By 2007, this number has exceeded 3 million, representing a 50% growth in the past five years.⁹ In the US, the most common reasons for people to seek acupuncture are low back pain 34%, joint pain 16%, neck pain 14%, and headache/migraine 10%.¹⁰ Among the estimated 2 million users, 44% of individuals sought acupuncture care because conventional medical care would not help, while 57% felt that combining acupuncture with conventional medical care would help. About 25-35% of respondents indicated that conventional medical professionals recommended their acupuncture use. Among users, 46% felt acupuncture helped a great deal, 26% had some help, and about 28% perceived that it provided very little or no help.¹⁰

Basic Scientific Basis of Acupuncture

The exact mechanism of action for acupuncture is not fully understood. Animal and human studies have demonstrated an analgesic effect that is mediated in part by endogenous opioid release,¹¹⁻¹⁴ and the non-naloxone responsive component is blocked by both serotonin and norepinephrine antagonists.¹⁵⁻¹⁸ Recently, neuroimaging techniques, including positron emission tomography (PET) scan,¹⁹⁻²¹ single-photon emission computed tomography (SPECT),²² and functional MRI,²³⁻²⁶ have provided new ways to study CNS acupuncture response. Data suggests that acupuncture may modulate the limbic system,^{23, 27} which processes the cognitive and emotional aspects of pain in humans. Additionally, the hypothalamus and brainstem networks are also implicated in acupuncture analgesia.²⁸ Furthermore, it has been suggested that non-specific effects, such as expectation, may also play an integral part in mediating the CNS response to acupuncture.^{19, 21} Peripherally, animal data suggests that acupuncture may result in local vasodilatation,^{29, 30} connective tissue displacement and transduction,³¹⁻³³ and inhibition of inflammatory response.³⁴ Based on these

basic science findings, the mechanism of acupuncture for chronic pain or other clinical issues is highly complex, recruiting both the central and peripheral networks and eliciting both psychological and physiological responses in individuals.

Clinical Evidence of Acupuncture

Over the last 40 years, thousands of acupuncture clinical trials have been conducted for diverse conditions. Prior to discussing the clinical evidence, it is important to have an understanding of the challenges of methodology in evaluating acupuncture, particularly the choice of control. What constitutes an appropriate placebo for acupuncture has been debated through the years and remains controversial.³⁵ Each control helps answer a small and specific question about the effects of acupuncture.^{36, 37} The needling of sham points, the needling of points other than theorized acupuncture points, tries to understand whether the effect of acupuncture is mediated through specific meridians and points. Shallow/superficial needling attempts to determine whether the depth of needling has an effect on the clinical response. The problem with using these control techniques is that skin penetration may excite diffuse noxious inhibitory control,³⁸ a physiological response that is not inert. The introduction of Streitberger needles,³⁹ a needle device that acts like a stage-dagger and gives the impression of skin penetration without piercing the skin, helps to delineate whether skin penetration is important in acupuncture therapy; however, such skin tactile stimulation is also not physiologically inert either. Acupuncture research methodologists argue that acupuncture trials ought to be conducted with 3-arms, true acupuncture, placebo/sham control, and standard medical care. In this way, the specific efficacy of needling effects and clinical relevance of acupuncture as an entire package of care can be evaluated simultaneously.⁴⁰

Clinical Evidence before 1997

The National Institutes of Health conducted a consensus conference based on review and expert presentation on literature from 1970 to 1997.⁴¹ The conference reached the following conclusions:

“Acupuncture as a therapeutic intervention is widely practiced in the United States. Although there have been many studies of its potential usefulness, many of these studies provide equivocal results because of design, sample size, and other factors. The issue is further complicated by inherent difficulties in the use of appropriate controls, such as placebos and sham acupuncture groups. However, promising results have emerged, for example, showing efficacy of acupuncture in adult postoperative and chemotherapy nausea and vomiting and in postoperative dental pain. There are other situations, such as addiction, stroke rehabilitation, headache, menstrual cramps, tennis elbow, fibromyalgia, myofascial pain, osteoarthritis, low back pain, carpal tunnel syndrome, and asthma, in which acupuncture may be useful as an adjunct treatment or an acceptable alternative or be included in a comprehensive management program. Further research is likely to uncover additional areas where acupuncture interventions will be useful.”⁴¹

This meeting helped lay the foundation for rigorous research in acupuncture over the next decade.

Clinical Evidence after 1997

Since the NIH consensus conference, high quality and well-powered clinical trials have been conducted in the US and European countries for low back pain, knee osteoarthritis (Knee OA), neck pain and headache (see table 1). These large clinical trials often show that the effects of acupuncture are clinically relevant, as compared to usual care or enhanced standard care; however, many trials resulted in inconsistent or clinically irrelevant effects of acupuncture

when compared to placebo/sham controls. Nevertheless, the effect of acupuncture in these clinical trials often can sustain for at least 6 months post-intervention. Furthermore acupuncture appeared to reduce the use of medications, improve pain related quality of life, and reduce time off from work. Several large cost-effectiveness analyses performed in Europe showed that acupuncture is a cost-effective intervention for low back pain,⁴² knee osteoarthritis,⁴³ neck pain⁴⁴ and headache.^{45, 46} The discussion of specific conditions is listed as follows:

Musculoskeletal complaints are extremely common in the primary care setting. In 2005, the National Ambulatory Medical Care Survey showed that musculoskeletal problems tied with respiratory complaints as the number one symptom category of patients seeing their family physicians, each with 9.9% of visits.⁴⁷ Back pain and knee pain accounted for 1/3 of these visits alone. In treating these patients, more and more physicians have turned to acupuncture as an adjunct or alternative to conventional treatment. In this section, we hope to provide a summary of the current evidence of the efficacy of acupuncture for both low back pain and knee osteoarthritis.

Acupuncture in Low Back Pain (Grade A Evidence)

As mentioned earlier, back pain is the most common reason for visits to acupuncturists in America.⁴⁸ While research in China has overwhelmingly shown that acupuncture is beneficial for treatment of back pain, the research throughout the rest of the world has often been inconsistent and controversial in its findings.⁴⁹ In the past decade, the number of high-quality randomized controlled trials (RCTs) studying acupuncture have increased tremendously, the majority of which have shown acupuncture to be better than no treatment and at least equivalent to usual care for back pain.⁴⁹ A 2005 meta-analysis of acupuncture for low back pain reviewed 22 RCTs and found a small but statistically significant benefit to acupuncture for chronic low back pain (> 3 months) when compared to sham acupuncture, sham TENS, and no additional treatment. It was not statistically better than other active treatments such as massage and manipulation. These results were true for both short- and long-term effects (> 6 weeks follow-up).⁴⁹

Since 2005, many European trials have added support for acupuncture but also stirred up controversy regarding “sham” acupuncture. In 2006, a RCT conducted by Brinkhaus et al. found acupuncture to be statistically effective in reducing pain scores when compared controls receiving no treatment for chronic low back pain (> 21 point improvement on 100 point scale at 8 weeks). However, the difference was found to be only 5 points when compared to sham acupuncture and the difference failed to be statistically significant at 26 and 52 weeks.⁵⁰ In 2007, the German Acupuncture Trials (GERAC), a randomized, multicenter, blinded parallel-group trial, compared acupuncture, sham acupuncture, and conventional therapy, following patient outcomes for 6 months after treatment. Both acupuncture and sham acupuncture had statistically significant response rates when compared to conventional therapy (47.6% and 44.2% vs 27.4%) at 6 months.⁵¹ Most recently, Cherkin et al. conducted a randomized control trial comparing acupuncture, non-insertive sham acupuncture, and usual care.⁵² He again found a statistically significant difference between acupuncture groups (sham and traditional) and usual care at 8 weeks and 26 weeks.⁵²

Acupuncture in Knee Osteoarthritis (Grade A Evidence)

As our patient population ages, the prevalence of patients suffering from knee osteoarthritis will continue to rise. Knee pain already affects 25% of patients over 55,⁵³ and one study showed that 70% of patients over the age of 50 with knee pain already have radiographic evidence of knee arthritis.⁵⁴ Because there is no definitive cure for osteoarthritis, current treatments are aimed at improving pain and function in hopes of delaying knee replacement surgery. As with back pain, acupuncture is being utilized with increased frequency as an adjunct or alternative

to both pharmacologic and non-pharmacologic treatment of knee osteoarthritis and is a common reason for referral to acupuncturists.¹⁰ Also similar to studies on back pain, the evidence for acupuncture for knee osteoarthritis is varied, especially in comparison to sham acupuncture.

Much of the research studying acupuncture within this decade has occurred in Germany. In the Acupuncture Research Trials (ARTs), acupuncture and sham acupuncture were compared to a wait-list control group for four common conditions, including knee osteoarthritis.³⁵ The primary outcome was pain scores on the Western Ontario and MacMaster University Osteoarthritis (WOMAC) index at 8 weeks follow-up. After eight weeks, the mean baseline-adjusted WOMAC index was 26.9 in the acupuncture group, 35.8 in the sham acupuncture group, and 49.6 in the control group. Treatment differences were -8.8 for acupuncture vs. sham acupuncture and -22.7 for acupuncture vs. waiting list, both statistically significant. In the acupuncture group, the success rate (defined as a 50% improvement in WOMAC score) was 52%, as compared with 28% and 3% in the sham acupuncture and control groups, respectively.⁵⁵

In 2006, Witt et al. followed the above study with the Acupuncture in Routine Care (ARC) study, a multicenter RCT with a nonrandomized arm that found acupuncture to be an effective adjunct to routine care for both hip and knee OA. At 3 months, the acupuncture group had a WOMAC score of 30.5 (change of 17.6) as compared to a score of 47.3 (change of 0.9) in the control group receiving usual care. The success rate was 34.5% in the acupuncture group as compared to 6.5% in the control group.⁵⁶

Alongside the ARTs, the GERAC trials were being conducted to compare acupuncture to sham acupuncture and guideline-oriented standard therapy. Unlike ARTs though, GERAC found very little difference between acupuncture and sham acupuncture. In results published by Scharf et al. in 2006, the success rates (defined as a 36% improvement in WOMAC scores at 13 and 26 weeks) were 53.1% for acupuncture, 51.0% for sham acupuncture, and 29.1% for standard therapy.⁵⁷ Both acupuncture and sham acupuncture were significantly better than standard therapy. Adding to this data, a 2007 meta-analysis of 9 RCTs found acupuncture to be significantly better in short-term pain and function improvement as compared to wait-list control groups but not significantly better than sham acupuncture.⁵⁸ These studies again raise questions as to whether sham acupuncture is truly inert. Another study illustrating this controversy was a systematic review and meta-analysis of RCTs that excluded trials without “true sham” acupuncture, defined as one that did not stimulate any nerves of the knee joint.⁵³ The authors also strictly defined “adequate” acupuncture based on sessions, points needed, length of session, and adequate sensation produced. When studies comparing “adequate” acupuncture to “true sham” acupuncture were analyzed, acupuncture was found to be significantly superior to sham acupuncture for both pain and function WOMAC scores in both the short- and long-term.⁵³

Neck Pain (Grade A Evidence)

A systematic review in 1999 analyzing 14 trials found that acupuncture was effective compared to one waitlist control in one trial, either superior or equal to physiotherapy in three studies, and had similar results to sham/placebo control.⁵⁹ Since then, acupuncture has been found to be superior to massage⁶⁰ and dry needling⁶¹ in motion-related neck pain. In a recent trial of acupuncture compared to placebo, acupuncture was found to have statistically significant but clinically irrelevant benefits.⁶² In a large pragmatic RCT (1880 randomized to acupuncture, 1886 to routine care only) nested in a large cohort study (N=14,161), acupuncture was found to have clinically relevant improvement for pain and disability ($P<0.001$) at 3 months and improvement persisted for 6 months at the final follow up. The non-randomized cohort of

acupuncture patients had more severe symptoms at baseline and showed greater improvement than the randomized patients who received acupuncture.⁶³

Headache (Grade A Evidence)

In a large epidemiology study conducted in Germany with patients with migraines, episodic or chronic tension-like headaches (N=2022), 53% of patients reported that frequency decreased by at least 50% or greater. Clinical improvement is also seen in other outcomes and quality of life.⁶⁴ Recent systematic review summarizing 11 trials of acupuncture for tension-like headache with 2317 patients found that acupuncture had statistically significant and clinically relevant benefit over routine care for both headache frequency as well as pain intensity. In five out of six trials, acupuncture had a small, statistically significant benefit over sham. The four trials comparing acupuncture against massage, physical therapy, or relaxation had significant methodological limitations, as data was difficult to interpret, and showed slightly better outcomes than control interventions.⁶⁵ In two cost effectiveness trials conducted in Germany⁴⁵ and England,⁴⁶ acupuncture was found to be cost effective when implemented into primary care network for headaches. In a study conducted among headache patients seen in neurology headache specialty clinics, the integration of acupuncture into ongoing medical management offered clinically relevant reductions in not only headache frequency and severity but also headache-related quality of life.⁶⁶

Putting Clinical Evidence into Patient-Centered Care

In analyzing these trials as a whole, the consistent take-home message is that acupuncture is effective for the treatment of chronic painful symptoms when compared to no treatment, routine care or even enhanced care of short-term efficacy. The achieved effects of acupuncture appear to sustain over a long-term period (6 months). Therefore, it seems a very reasonable adjunct or alternative to offer to patients for whom usual care is ineffective or declined. What is less clear is why sham acupuncture also produces similar improvements. A recent study by Harris et al. using C-carfentanil PET imaging, found that, while both real and sham acupuncture produced similar clinical benefit for patients with fibromyalgia, the mechanism underlying the pain reduction is different. Real acupuncture increased both short- and long-term mu-opioid receptor binding potential in multiple pain and sensory processing regions, while sham acupuncture actually resulted in only a small reduction.⁶⁷ This study suggests that the pathways of acupuncture and sham acupuncture produce clinical effects may be different.

Education of Physicians in Acupuncture

While an estimated 16,000 non-MD acupuncturists practice in the US, 6,000 physicians obtained training and incorporated acupuncture into their practice.¹⁰ Primary care physicians (PCPs) continue to dominate the physician-acupuncturist population, although anesthesiologists and pain management specialists contribute in significant proportions.⁶⁸ Currently, there are ten acupuncture training programs certified by the American Board of Medical Acupuncture for doctors. Each program requires at least 300 hours of training, 100 of which involves acupuncture-specific training. These programs vary not only in format, from video-based learning to conventional in-person courses, but also vary in their systems of acupuncture training.⁶⁹ Some information can be found online on acupuncture and acupuncture training (See Box 1).

Practical Concerns for Integrating Acupuncture into Primary Care

In order to provide more therapeutic options to patients, there are two ways to integrate acupuncture into primary care. One is to establish a trusted and competent referral partner who practices acupuncture. With close collaboration, patients' clinical issues can be addressed by

the acupuncturist and care can be coordinated by the PCP. Another way is to obtain additional training through the above-discussed certified courses. This is particularly useful for those PCPs who like a hands-on approach to patients. To be a good acupuncturist requires not only the skills but the right temperament because most of the patients seen are those with chronic pain, who have failed by conventional approaches, or who prefer non-traditional view of medicine or health. If one cannot build an empathic and nurturing relationship and remain open-minded with patients, gaining skills does not translate into a successful acupuncture practice. Furthermore, continued medical education in acupuncture and self-directed learning will further hone the skills of acupuncture. As one transitions into a physician acupuncturist, the role of a PCP may be shifted into that of a specialist, such that establishing a network of physician or health care provider partners to serve as a referral base will also be helpful. Some specific examples include other PCPs, sports medicine physicians, physical medicine and rehabilitation physicians, oncologists and physical therapists. The building of an acupuncture practice has its barriers, such as time and financial constraints;⁶⁸ however, with determination, a combination of skills and compassion, the practice of acupuncture in the context of primary care can be very rewarding both financially and psychologically as it help creates a holistic healing environment.

Patient-Physician Communication in Regards to Acupuncture Care

The essence of evidence-based medicine rests on the shared decision making with patients by aligning patients' preference with the best available evidence for the specific health conditions in the context of patients' social, cultural, and financial circumstances. The discussion of acupuncture in the context of conventional medicine not only needs to focus on the efficacy of acupuncture and various therapies but also their safety and potential harms. Secondly, since acupuncture is not covered by insurance in many states, for those with financial concerns, patients should instead be offered options for which insurance coverage is available, such as physical therapy or chiropractic care, given that patients' preferences for such approaches are equivalent to those for acupuncture. Third, as with any therapy, there are people who respond and some that do not respond to acupuncture; therefore, realistic expectations need to be set for patients. I often require patients to have at least a verbal commitment of six treatments before starting treatment. Although many patients may not need even six treatments to experience benefits, less optimal durations and intensities of treatments may lead to suboptimal outcomes. Lastly, many patients who seek acupuncture may be using multiple conventional and complementary therapies. I often ask them to avoid using two therapies (e.g. acupuncture, massage) within a 24 hour period so that each therapy is allowed to manifest its own effect. More importantly, should adverse event occurs, it may be easier to attribute the causal agent. As a PCP acupuncturist, the time spent with patients during acupuncture treatments also helps to reinforce active coping, self-efficacy and healthy life style modification, all of which can have additional benefits for patients' overall health beyond the primary reason for with patients seek acupuncture care.

Summary

Acupuncture is a safe, traditional Chinese medical therapy that is often perceived as both calming and relaxing for patients. Animal and human studies have found a physiological basis for acupuncture needling that involves both central and peripheral networks. Although it is unclear whether real acupuncture is more beneficial than sham/placebo acupuncture, acupuncture care yields both clinically relevant short- and long-term benefits for low back pain, knee osteoarthritis, chronic neck pain, and headache. Also, the integration of acupuncture into a primary care setting appears to be cost-effective for such conditions. Furthermore, the practice of acupuncture in primary care involves rigorous training, financial discipline, and the

art of communication. When it is done correctly, acupuncture proves to be beneficial for both patients and providers.

Box 1

Useful Acupuncture Internet Resources

Acupuncture Information for Patients:

National Center for Complementary and Alternative Medicine:

<http://nccam.nih.gov/health/acupuncture/>

Acupuncture Training Programs for Physicians:

American Academy of Medical Acupuncture

<http://www.dabma.org/programs.asp>

Overseas Acupuncture Program for Medical Students:

Acupuncture Education International

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Table 1
Strength of evidence for acupuncture as a treatment for common conditions

Key Clinical Recommendation on Acupuncture*	Evidence Rating	References
Low Back Pain: Effective	A	49-52
Knee / Hip Osteoarthritis: Effective	A	35, 53, 55-58
Headaches: Effective	A	59-63
Neck pain: Effective	A	45-46, 64-66

* Effective is determined by a comparison between acupuncture and routine care or enhanced medical care. In most studies, the specific effect of acupuncture needling against placebo/sham acupuncture is small and findings are inconsistent.