

Acupuncture Workshop

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INTRODUCTION

The history of Traditional Chinese Medicine and acupuncture can be traced back 2,000 to 3,000 years. In *Shi Jing* (Book of Poems), a collection of verse compiled in the twelfth century B.C., a number of herbs are mentioned. In *Shi Ji* (Records of Historian) written 104-91 B.C., it is accounted that the technique of pulse taking and acupuncture was developed. Acupuncture is one of the treatment modalities within comprehensive Traditional Chinese Medicine. It has been practiced, now, for more than three millennia. Needles of flint, bamboo, and bone from the Neolithic period suggest that acupuncture existed long before the discovery of the metal. The “Yellow Emperor’s Classic of Internal Medicine” from the fourth century B.C. described the practice of puncturing the body for pain relief.

The acupuncture treatment is performed by inserting special hair-thin needles into the skin at specific sites, known as acupuncture points, for desired therapeutic and preventive purposes. Acupuncture can be effective in the treatment of mental as well as physical illnesses. The word acupuncture is derived from the Latin words *acus*, “needle,” and *punctura*, “a pricking”. The original terminology of acupuncture in Chinese is called “Jin Jiao” which consists with the practice of “acupuncture and moxibustion”. Moxibustion, burning of moxa (*artemisia vulgaris*) over the acupuncture points, can be also used for the treatment of various illnesses.

Acupuncture as a therapeutic intervention is now widely practiced in the United States. The National Institute of Health’s (NIH) consensus development conference on acupuncture concludes: there are promising results support the efficacy of acupuncture in adult postoperative and chemotherapy related nausea and vomiting and in postoperative dental pain. 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.¹ This workshop provides a practical and theoretical understanding of Traditional Chinese Medicine and acupuncture. The training and licensing requirements for acupuncturists and potential risks of acupuncture will also be addressed.

TRADITIONAL CHINESE MEDICINE

The use of Traditional Chinese Medicine and acupuncture can be traced back to the Neolithic times. Archeological vestiges exist which testify to the antiquity of its practice, although the practice was first passed on as an oral tradition. *“Huang Di Nei Jing”* (*“The Yellow Emperor’s Internal Classic”*), first compiled around 100 B.C., described the practice of Traditional Chinese Medicine and acupuncture as puncturing the body for pain relief. This work composed as a dialogue between the Yellow Emperor and his minister, Chi-Po. There are two depictions of sessions within the text, “Su Wen” (Common Questions) and “Ling Shu” (“Direction of Soul/Spirit”). Within Traditional Chinese Medicine, sharp distinctions are not made between the physical, psychological and synthetic. This contrasts with Western biomedical science, which tends to be reductionistic in its attempts to trace a linear cause-and-effect chain of events to a single identifiable etiology. In the Traditional Chinese Medicine framework, illness is understood as an overall pattern of a multiple of physical, psychological and environmental factors.

Two of the methods of defining and explaining the nature phenomena, theory of Traditional Chinese Medicine and acupuncture by the ancient Chinese involve the concepts of “Yin” and “Yang” and “the five phases”. The theoretical basis of Traditional Chinese Medicine stems from a system of metaphysics, which focuses on the balance between two opposing forces: Yin and Yang. The concept of Yin and Yang is simple, but its meaning is profound. Yin and Yang are interdependent, existing in a constant state of dynamic balance. They can transform into each other, and are natural phenomena that also exist within the body. Yin is present in the qualities of cold, rest, passivity, dark, inward, decrease, and female. Yang is associated with hot, activity, activity, light, outward, increase, and male. (Table 1) Health requires a balance of Yin and Yang within the body. Disease is characterized by a disharmony or a lack of balance between Yin and Yang.

The balance of Yin and Yang within the body promotes in the flow of “Qi” (pronounced “chee”). Qi is not easily translatable or definable, as a clear distinction between matter and energy is not made in Chinese metaphysics. It signifies power, movement, a tendency similar to energy. Qi is a functional, active part of the body. All living creatures result from the Qi of Heaven and the Qi of Earth. The union of the Qi of the Heaven and Earth creates the Qi of human being. Qi is an energy that manifests concurrently on the physical and spiritual level. Qi flows through a complex system of meridians throughout the body, maintaining life and health. These meridians are not defined by physical structures such as blood or lymphatic vessels, but by their function. The body is viewed as a dynamic system of organs connected by the flow of Qi within the meridians. Twelve different meridians are identified in Traditional Chinese Medicine, reflecting either the body’s anatomical or energetic functions.

Illness results from inadequate flow of Qi through the meridians. The flow of Qi may be restored by the insertion of several very fine needles into a combination of points from the 365 classical acupuncture points that exist along the meridians. The manual twirling of these needles produces a sore, heavy, or numb sensation known as “De Qi” (“obtaining Qi”). Practitioners of Traditional Chinese Medicine observed that stimulating specific acupuncture points resulted in predictable responses in patients with a given pattern of signs and symptoms. The great treatises *“Huang Di Nei Jing”* (*“The Yellow Emperor’s Internal Classic”*) guide the practitioner to select the correct points for a particular condition. Several treatments may be required over the course of weeks or months.

The theory of five phases is based on the notion that all phenomena in the universe are the products of the evolution of five substances: wood, → fire →, earth, → metal, → water, and → wood. In Traditional Chinese Medicine, the five phases theory corresponds with the normal physiology, influences the pathologic changes, and affects the management of ailments. An unidentified author once translated it as “five elements”. The interactions between them are dynamic processes. “Five phases” is a better translation, with all five phases interacting with each other.

The “sheng” cycle is a “creating” cycle. Fire creates earth; earth creates metal; metal engenders water; water promotes wood; wood promotes fire. If there is an increase in wood, wood will then increase fire. If there is increase in fire, earth will increase metal. If there is an increase in earth, metal will then increase water. If there is an increase in metal, the water then will increase the wood. Each phase has a corresponding Yin and Yang channel, corresponding with meridians in the body. We can then strengthen each organ accordingly (Table 2).

The ‘ke’ cycle is a controlling/restraining cycle. Wood splits earth; earth blocks water; water extinguishes fire; fire melts metal; metal cuts wood. The controlling sequence ensures that a balance is maintained among the five phases. The mutual generating and controlling relationship is a model of many self-regulating and balancing processes exist in the human being and nature.

Practitioners of acupuncture routinely request the patient’s detailed past history and present illness in pursuing the diagnosis. In addition, attention is focused on the character of the pulse and the appearance of the tongue. In Traditional Chinese Medicine, there are six pathological factors that cause disease: wind, cold, heat, dampness, dryness, and fire. The goal of the history and physical is to assess the patient’s balance of Yin, Yang and gain insight into other symptoms. There are eight principal classifications of symptoms, which include Yin or Yang, superficial or deep, cold or hot, and deficient or excess. The aim of therapy is to restore deficiencies or correct excesses in Qi, thus refurbishing the health. Acupuncture, herbs, and moxibution are frequently used for the preventive as well as therapeutic purposes.

Traditional Chinese Medicine has evolved over the past three millennia and continues to be used today in China, throughout Asia, and communities around the world. The theory and practice of Traditional Chinese Medicine differs considerably from Western medicine, often making Traditional Chinese Medicine difficult to understand and accept. However, the lack of understanding of the specific biologic mechanism does not preclude its use and practice. The utility and validity of Traditional Chinese Medicine lies in the demonstration of its effectiveness. As with new therapy, however, properly conducted laboratory and clinical studies are necessary to establish the safety and effectiveness of Traditional Chinese Medicine.

The first European report on Traditional Chinese Medicine and acupuncture came from a sixteenth century Jesuit in Canton, China by Portuguese, Dutch, Danish and French missionaries. Earlier reports mentioned the techniques of diagnosis by feeling the pulses and looking at the tongue. Consuming herbs, tea, or inserting needles were reported to promote health and prevent illnesses. Sir William Osler’s *Principles and Practice of Medicine*, first published in 1892, recommended acupuncture for the treatment of sciatica and lumbago. In the 1901 edition of *Gray’s Anatomy* also noted the use of acupuncture for lumbago. The interest in acupuncture in the U.S. started in 1970s when James Reston described in a front page article in *The New York Times* how his postoperative pain from an emergency appendectomy had been alleviated by acupuncture. Since then, stories of the use of acupuncture for anesthesia during major surgery in China have been appearing in the Western press. This popular interest soon led to scientific efforts to test the clinical effectiveness and elucidate the underlying physiologic mechanism of acupuncture for analgesia. In the West, basic scientific and clinical research has focused on the use of acupuncture for the management of pain. Randomized controlled trials have not historically been part of Traditional Chinese Medicine and acupuncture, which was derived empirically through many years of experience.

SCIENTIFIC EVIDENCE

Basic scientific research has focused on understanding acupuncture from a neurobiological perspective. One possible theory is that acupuncture inhibits the transmission of pain according to the gate-control theory put forth by Wall and Melzack in 1965.² In this model, acupuncture may act by stimulating sensory A-beta fibers, directly inhibiting the spinal transmission of pain by a smaller A-delta and C fibers.³

The subject of most basic research has been the relationship between acupuncture and the production of endogenous opioid peptides, such as the endorphins, enkephalins, and stimulation of the endogenous descending inhibitory pathways. In human studies, analysis of cerebrospinal fluid (CSF) after acupuncture treatment showed elevated levels of serotonin, endorphins, and enkephalins following acupuncture treatments.⁴ Although the mechanism of acupuncture analgesia is not entirely clear, a growing body of scientific knowledge indicates that, “the essence of acupuncture analgesia is mainly the activation of the endogenous antinociceptive system to modulate pain transmission and pain response”.⁵ Low frequency (2Hz) and high frequency (100 Hz) electrical acupuncture selectively induces the release of enkephalins and dynorphins in both experimental animals and humans.⁶ Peripheral stimulation of the skin or deeper structures activates various brain structure and/or spinal cord via specific neural pathways.⁷ An early human study by Mayer et al indicated that acupuncture analgesia may be reversed by naloxone.⁸ Similar findings were reported in animal studies. However, a subsequent human study by Chapman failed to show evidence of naloxone-reversal of analgesia.⁹

Pomeranz offered a comprehensive theory, which proposes that acupuncture activates small myelinated nerve fibers in the muscle, sending impulses to the spinal cord, which then activate centers in the spinal cord, mid-brain, and pituitary-hypothalamus to produce analgesia.¹⁰ The spinal cord may use enkephalin and dynorphin to block incoming pain signals. In the midbrain, enkephalin may activate the raphe descending system, which inhibits pain transmission at the level of the spinal cord with the monoamines serotonin and epinephrine. The pituitary-hypothalamus may act to release beta-endorphin into the blood and CSF to produce analgesia at a distance. He postulated a similar mechanism, emphasizing the importance of the periaqueductal grey in initiating descending as well as ascending pain inhibitory pathways.⁵

Functional magnetic resonance (fMRI) is utilized to investigate the effect of acupuncture in normal volunteer to provide the foundation for the understanding of the mechanism of acupuncture. Correlations between the BL 67 (Zhi Yin) acupuncture point with the visual cortex was investigated.¹¹ Acupuncture needle manipulation on the LI 4 (Hegu) point modulates the activity of the limbic system and subcortical structure revealed in fMRI.¹² There is individual variation of the cortical activation patterns elicited by the electrical acupuncture stimulation. Real acupuncture elicited significantly higher activation than sham acupuncture over the hypothalamus and primary somatosensory-motor cortex and deactivation over the rostral segment of anterior cingulate cortex. The minimum acupuncture elicits the significantly higher activation over the medial occipital cortex.¹³

PRACTICAL GUIDE

A wide variety of acupuncture needles are available. “*Huang Di Nei Jing*” (“*The Yellow Emperor’s Internal Classic*”) “Ling Shu” described nine shapes of acupuncture needles. Most needles now used in clinical practice are made of stainless steel, although needles of other metals, such as gold, are also available. They may be disposable or reusable. Reusable needles must be sterilized by appropriate autoclave techniques between uses. Sterile disposable acupuncture needles are preferable in the current medical standard of practice. Needles vary from ½ inch to 5 inches in length and from 36 – to 42 – gauge. A comparison of the size of electromyography (EMG) and acupuncture needle size are listed in table 3. A steel or plastic insertion tube can be a guide for the placement of the needle. The needle is tapped through the epidermis while the tube is in place. Deeper insertion is achieved by manipulation of the needle after the tube is removed. (Figure 1)

Following insertion, stimulation of the acupuncture may be achieved manually or by use of electroacupuncture. Each acupuncture point has a prescribed depth of insertion. Manual techniques may involve the lifting and thrusting of the needle and / or twisting and twirling of the needle. Electroacupuncture achieves a similar effect by attaching low-voltage electrodes to the needles. The intensity, pulse width, and duration may be varied, much in the same way as in transcutaneous electrical nerve stimulation (TENS).

Relatively little pain results in the insertion of the needles. Most acupuncturists are quite skilled in the painless insertion of needles. In our experience, most children can accept acupuncture treatment well.¹⁴¹⁵ For various conditions, it may require multiple acupuncture treatment sessions over an extended period of time to demonstrate its effectiveness. Extended follow-up would be required to demonstrate the statistical significance by studying large numbers of patients.

Auricular acupuncture is one of the microsystem of acupuncture. Upper region of the external ear are used to alleviate conditions in the leg and feet. Middle region of the external ear represent chest and back pain. Lower regions relief headache and neurological conditions. Auricular acupuncture can be utilized for preoperative anxiety control.¹⁶⁻¹⁹

RISKS OF ACUPUNCTURE

Acupuncture is extremely safe. Occasionally, a patient may have some bruising at an acupuncture site. The principal risk is infection from use of improperly sterilized needles. Cases of hepatitis B²⁰ HIV infection²¹, and fatality²² have been reported. This can be avoided by using disposable sterile acupuncture needles and proper insertion of the needles.

The review of nine surveys showed the most common adverse events were needle pain (1% to 45%), tiredness (2% to 41%), and bleeding (0.03% to 38%). Feelings of faintness and syncope were uncommon, with an incidence of 0% to 0.3%. Feelings of relaxation were reported by as many as 86% of patients. Pneumothorax was rare, occurring only twice in nearly a quarter of a million treatments.²³ A study of the adverse effects of 32,000 acupuncture consultations in the U.K. revealed that the most common adverse events were bleeding, needling pain and aggravation of symptoms. None of these events was serious.²⁴ Another study involved a prospective postal audit of treatments undertaken, 1848 professional acupuncturists in the U.K. during a four week period in 2000. All were invited to record details of adverse events and mild transient reactions after treatment. Participating practitioners reported on 34,407 treatments. There were no reports of serious adverse events. They reported 43 minor adverse events, a rate of 1.3 per 1000 treatments, included severe nausea and fainting (12 cases), prolonged aggravation of the symptoms (7 cases), and pain and bruising (5 cases). There were three avoidable events: two patients had needles left in, and one patient had moxibustion burns to the skin were caused by practitioners' errors.²⁵

CLINICAL USE OF ACUPUNCTURE

Systematic reviews from randomized controlled trials provide the best evidence approach of practicing medicine. This method is least subject to bias assessing the efficacy of the therapy. Clinical research of acupuncture has largely consisted of uncontrolled trials for the treatment of chronic pain in adults. While beneficial results have been frequently demonstrated, the flawed design of many studies gives limited value to the results.

Several difficulties are inherent in the designing of valid blinded, randomized controlled trials of acupuncture.^{26,27} The studies can be, at best, single blind, as a trained acupuncturist must do the needling. Difficulties also arise in determining an appropriate placebo for the control group. Various studies have used “sham” acupuncture (needles placed at incorrect or non-meridian sites), other devices (such as a non-functional TENS unit), or no treatment at all. This factor is important, since as many as 30% of subjects may respond positively to some placebos. There is little consistency in literature pertaining to the criteria used for acupuncture research.

Sham acupuncture is commonly used for the control treatment in research trials involving acupuncture, but presents a unique problem as a placebo. The well outlined energy channels of the acupuncture meridian systems cover the entire body, linking Wei-Qi (defence Qi), Rong-Qi (growth and development Qi), and Yuan-Qi (the original Qi inherited at birth). As the meridian systems effect the entire body, the sham acupuncture does have some acupuncture effects. The placebo control implies the use of true inert intervention. The sham acupuncture is different from pure placebo effects. To try to address this difficulty, a placebo acupuncture needle has been developed. The placebo acupuncture needle retracts back into the handle of the acupuncture needle and does not penetrate the skin.²⁸

Chronic Pain

Richardson and Vincent²⁹ have reviewed 27 controlled studies of acupuncture for treating acute and chronic pain, as well as several large uncontrolled studies. Fifty to eighty percent of patients showed that short-term data made assessment of long-term effectiveness difficult. In a meta-analysis of 14 randomized controlled trials of acupuncture for chronic pain in adults, Patel and colleagues found that while few of the individual trials demonstrated statistically significant benefit from acupuncture, the pooled results for several subgroups attained statistical significance in favor of acupuncture.³⁰

Low Back Pain

Low back pain is not well defined, but involves a nonspecific category of complaints of various causes. In a meta-analysis of twelve randomized controlled trial, acupuncture was found to be superior to various control interventions for the management of low back pain.³¹ A randomized controlled trial of acupuncture versus transcutaneous electrical nerve stimulation for chronic low back pain in the elderly revealed that both are equally effective. Acupuncture may improve spinal flexion.³² A randomized controlled study of 50 patients with low back pain showed a significant decrease in intensity of pain occurred at 1 and 3 months in the acupuncture groups, compared with the placebo group. There was a significant improvement in return to work, quality of sleep, and analgesic intake in subjects treated with acupuncture.³³ A recent randomized controlled study revealed significant improvement from traditional acupuncture in chronic low back pain as compared to routine care (physiotherapy), but not compared to sham-acupuncture. The improvements include pain intensity, pain disability, and psychological distress at the end of 12 weeks of treatment. At the nine-month follow-up point, the superiority of acupuncture over the control condition had lessened.³⁴

Headache

Acupuncture therapy for migraine headaches has also been reported to be effective in several adult studies.^{35,36} A systematic review of 22 trials, including 15 migraine, 6 tension, and 1 mixed, including a total of 1042 patients, concludes that the existing evidence suggests that acupuncture has a role in the treatment of recurrent headaches.³⁷ In a randomized controlled trial of 168 women with migraine, acupuncture was proved to be adequate for migraine prophylaxis. Relative to flunarizine, acupuncture treatment exhibited greater effectiveness in the first months of therapy and superior tolerability.³⁸ Our experience also indicates that acupuncture can be a useful complementary therapy for the management of pediatric headache.³⁹

Temporomandibular Joint Dysfunction

Three randomized controlled trials, involving 205 patients, of acupuncture treatment of temporomandibular joint dysfunction were all positive. Acupuncture may be an effective therapy for temporomandibular joint dysfunction, however, studies still require confirmation with more rigorous methods of trials.⁴⁰

Neck Pain

Several clinical reports suggest acupuncture can be useful for patients with neck pain. Fourteen randomized controlled trial involved 724 subjects with various causes of neck pain did not provide significant evidence in support of acupuncture for the treatment of neck pain.⁴¹ There are too few trials for chronic neck pain of sufficient quality and homogeneity to be able to draw conclusions as to the effectiveness of the treatment. Several problems exist regarding to the scoring system.⁴² A randomized controlled study of 177 patients with chronic neck pain were randomly allocated to five treatments over three weeks with acupuncture (56), massage (60), or “sham” laser acupuncture (61). The acupuncture patients received five treatments over three weeks. Acupuncture was an effective short-term treatment for patients with chronic neck pain.⁴³

Myofascial Pain Syndrome

Acupuncture may be useful for the treatment of chronic myofascial pain. In an uncontrolled study, Lewit reported immediate relief in 87% of cases and long-term benefit in at least 92 of 288 cases.⁴⁴ Melzack and colleagues reported a 71% correlation between acupuncture points and trigger points used in the treatment of myofascial pain.⁴⁵

Neuropathic Pain

Peripheral neuropathy is common in patients infected with human immune deficiency virus infection. Neither acupuncture nor amitriptyline was more effective than placebo in relieving pain caused by HIV-related peripheral neuropathy.⁴⁶

Seizure

Case report revealed acupuncture for a pediatric patient with status epileptics.⁴⁷ A study involved 29 patients with chronic seizure disorder were randomized in two groups; 15 were given classical acupuncture and 14 were given sham acupuncture. There was a reduction in seizure frequency in both groups, which did not reach a level of statistical significance. There was also an increase in the number of seizure-free weeks in both groups.⁴⁸

Complex Regional Pain Syndrome

Reports have appeared about the benefits of traditional acupuncture therapy and auricular therapy in treating Complex Regional Pain Syndrome (CRPS), formerly known as reflex sympathetic dystrophy (RSD).^{49,50} However, each of these reports involves only 1 to 5 patients in uncontrolled studies. In addition, the intermittent natural history of pain in RSD makes reassessment of treatment effect difficult.

Nausea and Vomiting

Acupuncture is commonly used for the management of nausea and vomiting. Stimulation of the PC-6 (*Nei Guan acupuncture point; Chinese means Gate of the Internal Organ*) points by acupuncture needles, electrical apparatus, pressure, or magnets are used to treat nausea and vomiting due to sea-sickness, pregnancy, or from the side effects of surgery or chemotherapy. PC-6 point is located 2 inches above the transverse crease of the wrist, between the tendons of the long palmar muscle and the radial flexor muscle of the wrist. A systematic review was conducted of 33 randomized controlled trials of acupuncture and acupressure. The results of twenty-seven of the trials were positive.⁵¹ In a laboratory study of experimentally induced motion sickness, 64 volunteer were placed in an “optikokinetic drum” (the drum’s inner surface was covered with alternating black and white stripes to increase visual-induced motion sickness). The PC-6 acupressure group showed significantly reduced intensity in subjective and objective symptoms of visual-induced sickness.⁵²

Sleep Disturbance

One randomized controlled trial of 40 patients with primary sleep disturbance, reported that acupuncture is better than sham acupuncture for objective and subjective sleep disturbance.⁵³ Acupuncture may be an effective intervention for sleep disturbance.⁵⁴

Acute Pain

Acupuncture may be more useful in predictable situations involving acute pain in pediatric population, such as dental procedures and postoperative pain, or in the setting of medical conditions with recurrent episodes of acute pain, such as sickle-cell crisis and recurrent abdominal pain. Although effective treatment is available in many cases (i.e., local anesthetics for dental procedures, opioids for severe post-op pain), side effects, such as respiratory depression, may be seen. Taub and colleagues used acupuncture for the treatment of dental pain in a single blind, randomized controlled trial in 39 patients undergoing dental restoration for cavities.⁵⁵ Patients were randomized between real and sham acupuncture. Seventy percent of the experimental group reported good or excellent pain reduction, fifty-three percent of the control group reported good or excellent pain reduction. The results for the two groups showed no statistical significance. Systematic review has shown that acupuncture is effective in relieving dental pain.⁵⁶ The study of the effect of acupuncture in pain after lower abdominal surgery revealed that preoperative treatment with low or high frequency electroacupuncture can reduce the postoperative analgesic requirement and decreased the side effects of systemic opiates.⁵⁷

REFERRING PEDIATRIC PATIENTS FOR ACUPUNCTURE TREATMENT

It is important to distinguish the difference between disease and illness. The disease is what the physician can diagnose that the patient has; and the illness is what the patient feels. There is no cure for numerous pediatric diseases; however, acupuncture can be used to treat various illnesses associated with pediatric disorders or to conquer the side effects associated with conventional medical therapies. Further larger scale randomized controlled trials are still needed to evaluate the efficacy of the therapy.

Licensing guidelines for the practice of acupuncture is determined individually by each state. The National Commission for the Certification of Acupuncturists (NCCA) has developed standards for training and certification. Most states use the NCCA examination process to license acupuncturists. Some states require licensed physicians' supervision of acupuncturists. This includes confirming the diagnosis of the patient prior to treatment. Other states allow licensed acupuncturists (LAc) to practice independently. It is estimated that there are approximately 14,000-licensed acupuncturists in the U.S. Most acupuncturists receive two to three years of academic training, including supervised clinical experience in the treatment of a variety of medical disorders. Over the past several years, the use of Traditional Chinese Medicine has become more common and accepted in the U.S. Some of the Health Maintenance Organization (HMO) insurance plans have begun to cover acupuncture treatments for their patients. If there is a rise in the number of insurers willing to reimburse for pediatric acupuncture therapies, patient utilization is likely to continue to increase in the future.⁵⁸

Most states allow physicians to practice acupuncture after they have received appropriate training. A minimum of three hundred hours of formal training is considered necessary. The American Academy of Medical Acupuncture is one of the largest physician acupuncturist associations. The American Board of Medical Acupuncture has developed a comprehensive board certification process for physician acupuncturists. It is estimated there are 3,000 trained physician acupuncturists in the U.S. today.

How can we best advise pediatric patients for acupuncture treatment? The practitioner should discuss with the pediatric patients and their family about the treatment preferences and outcome expectations. It is important to thoroughly review with the patients the process of acupuncture, including its safety and efficacy. Pediatric patients should be referred to qualified acupuncture providers, and follow up appointments scheduled to monitor their treatment response.

THE TRAINING PROGRAM FOR MEDICAL ACUPUNCTURE

<p>Physician Acupuncture Training Programs Approved by the American Board of Medical Acupuncture (As of 12/15/01)</p>	
<p>Acupuncture Foundation of Canada Institute PO Box 93688 Shoppers World Postal Outlet 3003 Danforth Avenue Toronto, ON M4C 5R5 CANADA Phone: 416.752.3988; Fax: 416.752.4398 www.afcinstitute.com</p>	<p>Acupuncture Training Program / New York Medical College Dept. of Community and Preventive Medicine Munger Pavilion Valhalla, NY 10595 Phone: 914.594.4253; Fax: 914.594.4576 www.nymc.edu/cpm (see Educational Programs)</p>
<p>Chinese Acupuncture for Physicians: Scientific Basis and Practice Department of Family Medicine, University of Southern California Keck School of Medicine, and Cignolini Education Associates Office of Continuing Medical Education 1420 San Pablo St. PMB B-205 Los Angeles, CA 90033 Phone: 323.442-1313 www.chineseacupunctureforphysicians.com</p>	<p>Medical Acupuncture for Physicians University of California, Los Angeles c/o Helms Medical Institute 2520 Milvia Street Berkeley, CA 94704 Phone: 510.649.8488; Fax: 510.649.8692 Phil@HMleducation.com http://www.HMleducation.com/</p>
<p>Medical Acupuncture Program for Physicians and Dentists Tristate Institute of Traditional Chinese Acupuncture 80 8th Avenue #400 New York, NY 10011 Phone: 212.242.2255; Fax: 212.242.2920</p>	<p>Contemporary Medical Acupuncture for Health Professionals McMaster University School of Medicine Department of Anesthesia, Office of Continuing Medical Education 1200 Main St West Hamilton, ON L8N 3Z5 Canada Phone: 905-521-2100 ext.75175; Fax: 905-523-1224 email:acupuncturecourses@mcmaster.ca http://www.acupuncturecourses.com</p>
<p>Clinical Acupuncture for Physicians Division of Education And Training Department of Radiology PO Box 470617 Brookline Village, MA 02447-0617 Attn: Candace Cutler, Director Phone: 617-525-3310 ccutler@partners.org</p>	<p>The Art and Science of Acupuncture Part 1: The Basic Course Part 2: Advanced Program University of Miami The General Acupuncture Research and Training Clinic PO Box 016960(D-79) Miami, FL 33101 (305)243-2178 or fax (305)243-3648 Spurcell@med.miami.edu http://www.med.miami.edu/psychiatry/acupuncture.htm</p>
<p>Medical Acupuncture for Physicians Office of Continuing Medical Education SUNY Downstate Medical Center 450 Clarkson Ave., Box 1244 Brooklyn, NY 11203 718-270-2422; Fax 718-270-4563 Tsai C. Chao, MD Course Director ocme@downstate.edu www.downstate.edu/ocme</p>	

Table 1. Yin and Yang are projected to all levels of cosmos through a system of correspondences

	Yin	Yang
Nature	Winter Dark Cold Night Moon Rest Earth Low Heaviness	Summer Bright Hot Day Sun Activity Heaven High Lightness
Body	Female Lower Interior Front Structure Inhibition Deficiency	Male Upper Exterior Back Function Stimulation Excess
Medicine	Chronic Disease Gradual Onset Cold Pale Moist Loose Stool	Acute Disease Rapid Onset Heat Red Thirst Constipation

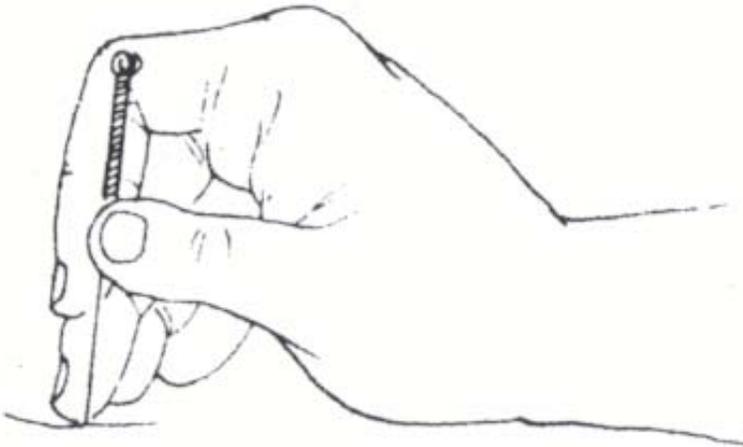
Table 2
Five phases and their corresponding meridians

Fire	Earth	Metal	Water	Wood
Heart/ pericardium	Spleen	Lung	Kidney	Liver
Small intestine/ san jiao	Stomach	Large intestine	Bladder	Gallbladder

Table 3.
Common use acupuncture vs. electromyography needle size.

	Gauge	Diameter in mm
Acupuncture needles	42	0.14
	40	0.16
	38	0.18
	36	0.20
	34	0.22
Electromyography needles	30	0.30
	27	0.40
	26	0.45
	23	0.60

Fig 1. Manual insertion of an acupuncture needle.



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