

## Be Wary of Acupuncture, Qigong and "Chinese Medicine" (Stephen Barrett, M.D.)

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"Chinese medicine," often called "Oriental medicine" or "traditional Chinese medicine (TCM)," encompasses a vast array of folk medical practices based on mysticism. It holds that the body's vital energy (*chi* or *qi*) circulates through channels, called *meridians*, that have branches connected to bodily organs and functions. Illness is attributed to imbalance or interruption of *chi*. Ancient practices such as acupuncture, Qigong, and the use of various herbs are claimed to restore balance.

Traditional acupuncture, as now practiced, involves the insertion of stainless steel needles into various body areas. A low-frequency current may be applied to the needles to produce greater stimulation. Other procedures used separately or together with acupuncture include: moxibustion (burning of floss or herbs applied to the skin); injection of sterile water, procaine, morphine, vitamins, or homeopathic solutions through the inserted needles; applications of laser beams (laserpuncture); placement of needles in the external ear (auriculotherapy); and acupressure (use of manual pressure). Treatment is applied to "acupuncture points," which are said to be located throughout the body. Originally there were 365 such points, corresponding to the days of the year, but the number identified by proponents during the past 2,000 years has increased gradually to about 2,000 [1]. Some practitioners place needles at or near the site of disease, whereas others select points on the basis of symptoms. In traditional acupuncture, a combination of points is usually used.

Qigong is also claimed to influence the flow of "vital energy." Internal Qigong involves deep breathing, concentration, and relaxation techniques used by individuals for themselves. External Qigong is performed by "Qigong masters" who claim to cure a wide variety of diseases with energy released from their fingertips. However, scientific investigators of Qigong masters in China have found no evidence of paranormal powers and some evidence of deception. They found, for example, that a patient lying on a table about eight feet from a Qigong master moved rhythmically or thrashed about as the master moved his hands. But when she was placed so that she could no longer see him, her movements were unrelated to his [2]. Falun gong, which China recently banned, is a Qigong variant claimed to be "a powerful mechanism for healing, stress relief and health improvements."

Most acupuncturists espouse the traditional Chinese view of health and disease and consider acupuncture, herbal medicine, and related practices to be valid approaches to the full gamut of disease. Others reject the traditional approach and merely claim that acupuncture offers a simple way to achieve pain relief. The diagnostic process used by TCM practitioners may include questioning (medical history, lifestyle), observations (skin, tongue, color), listening (breathing sounds), and pulse-taking. Six

pulse aspects said to correlate with body organs or functions are checked on each wrist to determine which meridians are "deficient" in *chi*. (Medical science recognizes only one pulse, corresponding to the heartbeat, which can be felt in the wrist, neck, feet, and various other places.) Some acupuncturists state that the electrical properties of the body may become imbalanced weeks or even months before symptoms occur. These practitioners claim that acupuncture can be used to treat conditions when the patient just "doesn't feel right," even though no disease is apparent.

TCM (as well as the folk medical practices of various other Asian countries) is a threat to certain animal species. For example, black bears—valued for their gall bladders—have been hunted nearly to extinction in Asia, and poaching of black bears is a growing problem in North America.

### **Dubious Claims**

The conditions claimed to respond to acupuncture include chronic pain (neck and back pain, migraine headaches), acute injury-related pain (sprains, muscle and ligament tears), gastrointestinal problems (indigestion, ulcers, constipation, diarrhea), cardiovascular conditions (high and low blood pressure), genitourinary problems (menstrual irregularity, frigidity, impotence), muscle and nerve conditions (paralysis, deafness), and behavioral problems (overeating, drug dependence, smoking). However, the evidence supporting these claims consists mostly of practitioners' observations and poorly designed studies. A controlled study found that electroacupuncture of the ear was no more effective than placebo stimulation (light touching) against chronic pain [3]. In 1990, three Dutch epidemiologists analyzed 51 controlled studies of acupuncture for chronic pain and concluded that "the quality of even the better studies proved to be mediocre. . . . The efficacy of acupuncture in the treatment of chronic pain remains doubtful." [4] They also examined reports of acupuncture used to treat addictions to cigarettes, heroin, and alcohol, and concluded that claims that acupuncture is effective as a therapy for these conditions are not supported by sound clinical research [5].

Acupuncture anesthesia is not used for surgery in the Orient to the extent that its proponents suggest. In China physicians screen out patients who appear to be unsuitable. Acupuncture is not used for emergency surgery and often is accompanied by local anesthesia or narcotic medication [6].

How acupuncture may relieve pain is unclear. One theory suggests that pain impulses are blocked from reaching the spinal cord or brain at various "gates" to these areas. Another theory suggests that acupuncture stimulates the body to produce narcotic-like substances called *endorphins*, which reduce pain. Other theories suggest that the

placebo effect, external suggestion (hypnosis), and cultural conditioning are important factors. Melzack and Wall note that pain relief produced by acupuncture can also be produced by many other types of sensory hyperstimulation, such as electricity and heat at acupuncture points and elsewhere in the body. They conclude that "the effectiveness of all of these forms of stimulation indicates that acupuncture is not a magical procedure but only one of many ways to produce analgesia [pain relief] by an intense sensory input." In 1981, the American Medical Association Council on Scientific Affairs noted that pain relief does not occur consistently or reproducibly in most people and does not operate at all in some people [7].

In 1995, George A. Ulett, M.D., Ph.D., Clinical Professor of Psychiatry, University of Missouri School of Medicine, stated that "devoid of metaphysical thinking, acupuncture becomes a rather simple technique that can be useful as a nondrug method of pain control." He believes that the traditional Chinese variety is primarily a placebo treatment, but electrical stimulation of about 80 acupuncture points has been proven useful for pain control [8].

The quality of TCM research in China has been extremely poor. A recent analysis of 2,938 reports of clinical trials reported in Chinese medical journals concluded that that no conclusions could be drawn from the vast majority of them. The researchers stated:

In most of the trials, disease was defined and diagnosed according to conventional medicine; trial outcomes were assessed with objective or subjective (or both) methods of conventional medicine, often complemented by traditional Chinese methods. Over 90% of the trials in non-specialist journals evaluated herbal treatments that were mostly proprietary Chinese medicines. . . .

Although methodological quality has been improving over the years, many problems remain. The method of randomisation was often inappropriately described. Blinding was used in only 15% of trials. Only a few studies had sample sizes of 300 subjects or more. Many trials used as a control another Chinese medicine treatment whose effectiveness had often not been evaluated by randomised controlled trials. Most trials focused on short term or intermediate rather than long term outcomes. Most trials did not report data on compliance and completeness of follow up. Effectiveness was rarely quantitatively expressed and reported. Intention to treat analysis was never mentioned. Over half did not report data on baseline characteristics or on side effects. Many trials were published as short reports. Most trials claimed that the tested treatments were effective, indicating that publication bias may be common; a funnel plot of the 49 trials of acupuncture in the treatment of stroke confirmed selective publication of positive trials in the area, suggesting that acupuncture may not be more effective than the control treatments. [9]

Two scientists at the University of Heidelberg have developed a "fake needle" that may enable acupuncture researchers to perform better-designed controlled studies. The device is a needle with a blunt tip that moves freely within a copper handle. When the tip touches the skin, the patient feels a sensation similar to that of an

acupuncture needle. At the same time, the visible part of the needle moves inside the handle so it appears to shorten as though penetrating the skin. When the device was tested on volunteers, none suspected that it had not penetrated the skin [10].

In 2004, a University of Heidelberg team proved the worth of their "sham acupuncture" technique in a study of postoperative nausea and vomiting (PONV) in women who underwent breast or gynecologic surgery. The study involved 220 women who received either acupuncture or the sham procedure at the acupuncture point "Pericardium 6" on the inside of the forearm. No significant difference in PONV or antiemetic medication use was found between the two groups or between the people who received treatment before anesthesia was induced and those who received it while anesthetized [11]. A subgroup analysis found that vomiting was "significantly reduced" among the acupuncture patients, but the authors correctly noted that this finding might be due to studying multiple outcomes. (As the number of different outcome measures increases, so do the odds that a "statistically significant" finding will be spurious.) This study is important because PONV reduction is one of the few alleged benefits of acupuncture supported by reports in scientific journals. However, the other positive studies were not as tightly controlled..

### **Risks Exist**

Improperly performed acupuncture can cause fainting, local hematoma (due to bleeding from a punctured blood vessel), pneumothorax (punctured lung), convulsions, local infections, hepatitis B (from unsterile needles), bacterial endocarditis, contact dermatitis, and nerve damage. The herbs used by acupuncture practitioners are not regulated for safety, potency, or effectiveness. There is also risk that an acupuncturist whose approach to diagnosis is not based on scientific concepts will fail to diagnose a dangerous condition.

The adverse effects of acupuncture are probably related to the nature of the practitioner's training. A survey of 1,135 Norwegian physicians revealed 66 cases of infection, 25 cases of punctured lung, 31 cases of increased pain, and 80 other cases with complications. A parallel survey of 197 acupuncturists, who are more apt to see immediate complications, yielded 132 cases of fainting, 26 cases of increased pain, 8 cases of pneumothorax, and 45 other adverse results [12]. However, a 5-year study involving 76 acupuncturists at a Japanese medical facility tabulated only 64 adverse event reports (including 16 forgotten needles and 13 cases of transient low blood pressure) associated with 55,591 acupuncture treatments. No serious complications were reported. The researchers concluded that serious adverse reactions are uncommon among acupuncturists who are medically trained [13].

More recently, members of the British Acupuncture Council who participated in two prospective studies have reported low complication rates and no serious complications among patients who underwent a total of more than 66,000 treatments

14,15]. An accompany editorial suggests that in competent hands, the likelihood of complications is small [16]. Since outcome data are not available, the studies cannot compare the balance of risks vs benefit. Nor do the studies take into account the likelihood of misdiagnosis (and failure to seek appropriate medical care) by practitioners who use traditional Chinese methods.

### **Questionable Standards**

In 1971, an acupuncture boom occurred in the United States because of stories about visits to China by various American dignitaries. Entrepreneurs, both medical and nonmedical, began using flamboyant advertising techniques to promote clinics, seminars, demonstrations, books, correspondence courses, and do-it-yourself kits. Today some states restrict the practice of acupuncture to physicians or others operating under their direct supervision. In about 20 states, people who lack medical training can perform acupuncture without medical supervision. The FDA now classifies acupuncture needles as Class II medical devices and requires labeling for one-time use by practitioners who are legally authorized to use them [17]. Acupuncture is not covered under Medicare. The March 1998 issue of the Journal of the American Chiropractic Association carried a five-part cover story encouraging chiropractors to get acupuncture training, which, according to one contributor, would enable them to broaden the scope of their practice [18].

The National Certification Commission for Acupuncture and Oriental Medicine (NCCAOM) has set voluntary certification standards and certified several thousand practitioners. By November 1998, 32 states had licensing laws, with 29 of them using NCCAOM examination as all or part of their educational, training, or examination requirement, and three with additional eligibility criteria. The credentials used by acupuncturists include C.A. (certified acupuncturist), Lic. Ac. (licensed acupuncturist), M.A. (master acupuncturist), Dip. Ac. (diplomate of acupuncture), and O.M.D. (doctor of Oriental medicine). Some of these have legal significance, but they do not signify that the holder is competent to make adequate diagnoses or render appropriate treatment.

In 1990, the U.S. Secretary of Education recognized what is now called the Accreditation Commission for Acupuncture and Oriental Medicine (ACAOM) as an accrediting agency. However, such recognition is not based on the scientific validity of what is taught but upon other criteria [19]. Ulett has noted:

Certification of acupuncturists is a sham. While a few of those so accredited are naive physicians, most are nonmedical persons who only play at being doctor and use this certification as an umbrella for a host of unproven New Age hokum treatments. Unfortunately, a few HMOs, hospitals, and even medical schools are succumbing to the bait and exposing patients to such bogus treatments when they need real medical care.

The National Council Against Health Fraud has concluded:

- Acupuncture is an unproven modality of treatment.
- Its theory and practice are based on primitive and fanciful concepts of health and disease that bear no relationship to present scientific knowledge
- Research during the past 20 years has not demonstrated that acupuncture is effective against any disease.
- Perceived effects of acupuncture are probably due to a combination of expectation, suggestion, counter-irritation, conditioning, and other psychologic mechanisms.
- The use of acupuncture should be restricted to appropriate research settings,
- Insurance companies should not be required by law to cover acupuncture treatment,
- Licensure of lay acupuncturists should be phased out.
- Consumers who wish to try acupuncture should discuss their situation with a knowledgeable physician who has no commercial interest [20].

### **The NIH Debacle**

In 1997, a Consensus Development Conference sponsored by the National Institutes of Health and several other agencies concluded that "there is sufficient evidence . . . of acupuncture's value to expand its use into conventional medicine and to encourage further studies of its physiology and clinical value." [21] The panelists also suggested that the federal government and insurance companies expand coverage of acupuncture so more people can have access to it. These conclusions were not based on research done after NCAHF's position paper was published. Rather, they reflected the bias of the panelists who were selected by a planning committee dominated by acupuncture proponents [22]. NCAHF board chairman Wallace Sampson, M.D., has described the conference "a consensus of proponents, not a consensus of valid scientific opinion."

Although the report described some serious problems, it failed to place them into proper perspective. The panel acknowledged that "the vast majority of papers studying acupuncture consist of case reports, case series, or intervention studies with designs inadequate to assess efficacy" and that "relatively few" high-quality controlled trials have been published about acupuncture's effects. But it reported that "the World Health Organization has listed more than 40 [conditions] for which [acupuncture] may be indicated." This sentence should have been followed by a statement that the list was not valid.

Far more serious, although the consensus report touched on Chinese acupuncture theory, it failed to point out the danger and economic waste involved in going to practitioners who can't make appropriate diagnoses. The report noted:

- The general theory of acupuncture is based on the premise that there are patterns of energy flow (Qi) through the body that are essential for health. Disruptions of this flow are believed to be responsible for disease. The acupuncturist can correct imbalances of flow at identifiable points close to the skin.
- Acupuncture focuses on a holistic, energy-based approach to the patient rather than a disease-oriented diagnostic and treatment model.
- Despite considerable efforts to understand the anatomy and physiology of the "acupuncture points," the definition and characterization of these points remains controversial. Even more elusive is the scientific basis of some of the key traditional Eastern medical concepts such as the circulation of Qi, the meridian system, and the five phases theory, which are difficult to reconcile with contemporary biomedical information but continue to play an important role in the evaluation of patients and the formulation of treatment in acupuncture.

Simply stated, this means that if you go to a practitioner who practices traditional Chinese medicine, you are unlikely to be properly diagnosed.

### **Diagnostic Studies**

In 1998, following his lecture at a local college, an experienced TCM practitioner diagnosed me by taking my pulse and looking at my tongue. He stated that my pulse showed signs of "stress" and that my tongue indicated I was suffering from "congestion of the blood." A few minutes later, he examined a woman and told her that her pulse showed premature ventricular contractions (a disturbance of the heart's rhythm that could be harmless or significant, depending on whether the individual has underlying heart disease). He suggested that both of us undergo treatment with acupuncture and herbs—which would have cost about \$90 per visit. I took the woman's pulse and found that it was completely normal. I believe that the majority of nonmedical acupuncturists rely on improper diagnostic procedures. The NIH consensus panel should have emphasized the seriousness of this problem.

A study published in 2001 illustrates the absurdity of TCM practices. A 40-year-old woman with chronic back pain who visited seven acupuncturists during a two-week period was diagnosed with "Qi stagnation" by 6 of them, "blood stagnation" by 5, "kidney Qi deficiency" by 2, "yin deficiency" by 1, and "liver Qi deficiency" by 1. The proposed treatments varied even more. Among the six who recorded their recommendations, the practitioners planned to use between 7 and 26 needles inserted into 4 to 16 specific "acupuncture points" in the back, leg, hand, and foot. Of 28 acupuncture points selected, only 4 (14%) were prescribed by two or more acupuncturists. [23] The study appears to have been designed to make the results as consistent as possible. All of the acupuncturists had been trained at a school of

traditional Chinese medicine (TCM). Six other volunteers were excluded because they "used highly atypical practices," and three were excluded because they had been in practice for less than three years. Whereas science-based methods are thoroughly studied to ensure that they are reliable, this appears to be the first published study that examines the consistency of TCM diagnosis or treatment. I would expect larger studies to show that TCM diagnoses are meaningless and have little or nothing to do with the patient's health status. The study's authors state that the diagnostic findings showed "considerable consistency" because nearly all of the practitioners found Qi or blood stagnation. However, the most likely explanation is that these are diagnosed in nearly everyone. It would be fascinating to see what would happen if a healthy person was examined by multiple acupuncturists.

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