Acupuncture

Overview

Acupuncture has been part of the medical mainstream in countries such as China and Japan for centuries. It is also one of the most widely utilized forms of alternative therapy in the United States. More than 10 million acupuncture treatments are administered annually in the US alone. In addition, third-party insurance reimbursement and managed care coverage for acupuncture are increasing.

Due to its popularity, scientific investigation of acupuncture has grown dramatically in recent years, with many new studies reported every week. However, the results have been mixed at best.

What Is Acupuncture?

Simply defined, acupuncture is a treatment method aimed at eliciting a response (such as pain relief) through insertion of very fine needles in the body surface at sites called acupuncture points. A related technique called acupressure (or shiatsu) uses pressure on these points; a related therapy known as electroacupuncture applies electricity to the points.

A wide variety of treatment methods, approaches, techniques, styles, and theoretical frameworks exist within the very broad scope of the term acupuncture. Differences in forms of acupuncture are often cultural; the system of acupuncture practiced in Japan, for example, is quite different from that found in China. Many acupuncturists practice a more or less traditional style called Traditional Chinese Medicine (TCM). Others have adopted modern...
styles that have little or no reliance on traditional principles.

Acupuncture needles are most often inserted at specific locations on the skin called acupuncture points. These points are located on specific lines outlined by tradition, referred to as meridians or channels. According to Chinese medical theory, there are 14 major meridians that form an invisible network connecting the body surface with the internal organs. Meridians are to conduct Qi, the energy or vital force of the body. Pain or illness is said to result from imbalances or blockages in the flow of Qi through the meridians. Acupuncture is traditionally thought to remove such blockages, restore the normal circulation of Qi, and improve overall health by promoting the balance of energy in the system. However, there is no scientific evidence for the existence of the meridians or Qi itself. (Meridians are not visible under a microscope and, contrary to popular belief, they do not match major nerve pathways.)

In addition to meridians and Qi, the concept of yin and yang is central to acupuncture theory, as it is to all of traditional Chinese philosophy. The terms yin and yang do not represent forces or substances; rather, they are a way to look at the world in terms of the interaction of polar opposites. According to this viewpoint, all movement, growth, and change in the world is a manifestation of the push and pull of these forces. Although seemingly in opposition, these forces are thought to complement and support each other. For example, without rest one cannot exert energy; without becoming tired by exerting energy, it is difficult to sleep. This is just one illustration of the harmony and interaction of yin and yang.

Yang is traditionally associated with heat, power, daylight, summer, and many other active or energetic aspects of life; yin is cold, quiet, and dark. Many illnesses are characterized in terms of an excess or deficiency of either yin or yang, or of both at the same time. For example, when the body is feverish, it is too yang as a whole. There is also a yin and yang balance in each individual organ and part of the body; these can become excessive or deficient, too.

Thus, in TCM, illnesses are described as complex patterns of imbalances and blockages. Treatment is based not on medical diagnosis, but on identifying these problems in the body's energy and seeking to correct them. Does this traditional analysis contain truths about human health or is it just archaic thinking? The answer, as yet, remains unknown.

### History of Acupuncture

Primitive acupuncture needles dating back to around 1000 BC have been discovered in archeological finds of the Shan dynasty in China. The theoretical framework underlying the practice of acupuncture was first set forth in the *Inner Classic of Medicine* or *Nei Jing*, first published in 206 BC during the Han dynasty.

As an active and growing tradition, the theory and practice of TCM evolved over the centuries, at times undergoing rapid changes. Acupuncture reached perhaps its golden age under the Ming dynasty in the late sixteenth and early seventeenth centuries. Subsequently, it took second place to an ascending practice of herbal medicine. By the time acupuncture came back in vogue in twentieth-century China, it had undergone a major transformation sometimes called the herbalization of acupuncture. Current acupuncture methods given the name Traditional Chinese Medicine are derived to a great extent from this relatively modern revision of the theory. Present-day Japanese acupuncture, however, dates back to earlier versions of acupuncture.

Another major change occurred after the Communist Revolution in 1949. The new leadership, while wanting to carry through a process of modernization, decided to support and preserve traditional medicine. During the Cultural Revolution, the famous "barefoot doctors" were trained in both modern and traditional medicine and sent out to the rural areas to provide medical care for the masses. Today, in the largest and most modern Chinese hospitals, Western medicine and TCM, including acupuncture and herbal treatments, are practiced side by side.

Acupuncture entered France through colonial rule of Vietnam. It was there that, in 1957, the French physician Paul Nogier conceived the notion of auricular (ear) acupuncture. According to his theory, the entire body is “mapped” onto the ear in the form of an inverted fetus. Using this system of correspondence, one can, according
to Nogier, treat any part of the body by treating the corresponding part of the ear. This approach was subsequently taken up in China, despite the fact that it had been invented in the West, and had no real foundation in traditional practice. (Classic acupuncture includes only a few points on the ear, and does not refer to any representation of the entire body.) Nogier claimed to have “scientifically tested” his theory, but the methods he used to accomplish this fall far short of anything recognizable as modern science. There are no properly designed studies to support the “little man on the ear” hypothesis, and the one well-designed study on the subject failed to find any correlation between pain in the body and tenderness in corresponding parts of the ear as predicted by Nogier’s theory. 

Acupuncture was virtually unheard of and unavailable in the US until 1972, when President Nixon made his historic visit to China. Among the accompanying press was the well-known journalist James Reston, who was hospitalized while in China and received acupuncture anesthesia. Upon returning to the US, Reston published an article about his experience, stimulating new interest in acupuncture among the public and the medical community. Although it was later discovered that the drugs used along with acupuncture anesthesia probably played a major role, the perception of acupuncture as a powerful treatment caused it to gain respect in the US. Acupuncture schools began to open in the late 1970s and 1980s. With training available in the United States, the number of acupuncturists in this country began to grow rapidly, and today there are many thousands of certified and/or licensed acupuncturists.

### How Does Acupuncture Work?

The exact mechanisms by which acupuncture might produce effects on the body remain unknown. Weak preliminary evidence from the 1970s hints that acupuncture encourages the release of endorphins (morphine-like compounds that function as the body’s internal pain-regulating substances). Support for this theory comes from a study in which use of the drug naloxone, which opposes the effects of endorphins, was found to block pain relief from acupuncture. However, the body releases endorphins in response to any sort of pain, and it may be that it is needle-insertion per se, and not acupuncture, that is responsible for the rise in endorphins. Furthermore, there is some evidence that the placebo effect itself works by means of endorphins—in one study, naloxone blocked the ability of a placebo treatment to reduce pain.

It has also been proposed that acupuncture may influence other chemicals in the body that control various physiologic activities. Preliminary studies have shown possible effects of acupuncture on norepinephrine, acetylcholine, and cyclic AMP, all of which are "chemical messengers" that regulate key systems in the body. However, none of this evidence is strong.

### What Is the Scientific Evidence for Acupuncture?

Although there have been numerous controlled studies of acupuncture, there is no condition for which acupuncture’s supporting evidence is strong. There are several reasons for this, but one is fundamental: even with the best of intentions, it is difficult to properly ascertain the effectiveness of a hands-on therapy such as acupuncture.

Only one form of study can truly prove that a treatment is effective: the double-blind, placebo-controlled trial. However, it isn’t easy to fit acupuncture into a study design of this type. One problem is designing a form of placebo acupuncture, and an even more challenging problem is to keep participants and practitioners in the dark regarding who is receiving real acupuncture and who is receiving fake. But without such blinding, the results of the study can be skewed by numerous factors. For a discussion of these factors, see Why Does This Database Rely on Double-blind Studies?

In an attempt to approximate double-blind studies of acupuncture, researchers have resorted to a number of clever techniques. Perhaps the most common involves sham acupuncture. In such studies, a fake version of acupuncture
is used to keep participants in the dark. However, because the acupuncturist knows that this is a fake treatment, he or she may subtly convey a lack of confidence in the outcome. Such studies are called single-blind and are not fully trustworthy. (The only exception are studies in which the patient is anesthetized prior to the acupuncture, and is therefore, presumably, incapable of receiving this sort of “top spin.”)

To get around this problem and produce a truly double-blind study, some studies may employ technicians trained only to insert needles, rather than real acupuncturists. Such technicians might be given a list of real acupuncture points or phony acupuncture points, without being told which is which. However, it is not reasonable to suppose that an essentially untrained technician can give an acupuncture treatment as effective as that of a real acupuncturist. Furthermore, using a fixed set of points to treat a problem is not true to traditional acupuncture, which always individualizes treatment to the person.

Another approach is to use real acupuncturists to deliver treatment, but to have a separate person evaluate the effects of that treatment. Such studies may be described as partially double-blind (or observer blind); they prevent researchers from biasing their own observations, but they still don’t eliminate the problem that the acupuncturist might communicate confidence (or lack of it) to the participants. The placebo effect in acupuncture is very sensitive to expectation; in one study, patients who believed they were getting real acupuncture experienced benefits and those who believed they were getting fake acupuncture failed to experience benefits. Whether or not they were actually receiving real or fake acupuncture proved to be irrelevant; it was the belief that mattered. One naturally doubts whether acupuncturists are sufficiently adept at hiding their true feelings from their patients. Osteopathic physician Kerry Kamer suggested a whimsical approach to testing acupuncture: for the placebo group, use actors trained to convey confidence while performing fake acupuncture. However, such studies have not yet been reported.

Despite their limitations, most of the best studies available at present are the single-blind or partially double-blind designs described earlier. Although imperfect, they at least can give us some idea whether true acupuncture might be effective.

There is another problem to consider as well: acupuncture causes a very strong placebo effect, whether it’s real or fake. This phenomenon tends to diminish the difference in results between the treatment group and the placebo group and can potentially hide a true benefit by making it too small to reach statistical significance. As an example, consider a study in which 67 people with hip arthritis received either random needle placement or actual acupuncture. The results showed improvement in both groups, but to the same extent. Does this mean that traditional acupuncture is actually no better than random acupuncture? Not necessarily. The study could simply have been too small to identify benefits that did occur. In studies that show a strong placebo effect, it may be necessary to enroll hundreds of participants to show benefit above statistical “background noise.” Keep this in mind regarding all of the negative trials described below. A small study can fail to find benefit, but it cannot actually prove lack of benefit.

Some studies have compared acupuncture to other therapies, such as physical therapy or massage. Trials of this kind are good for determining relative cost effectiveness, but they can’t be taken as proof of efficacy for one simple reason: these other therapies have never been proven effective themselves.

Numerous acupuncture studies failed to use placebo treatment or had no control group at all. Such studies prove nothing and generally are not reported here.

There is one additional problem in evaluating the evidence for acupuncture: Many of the studies were performed in China, and there is evidence of systematic bias in the Chinese medical literature. In 1998, researchers evaluating the acupuncture studies from China discovered that every one found acupuncture effective. This led them to look further into other Chinese medical research. Review of controlled trials involving other therapies, including standard drugs, showed that Chinese trials reported positive results 99% of the time. Although some bias exists in all medical publications, this finding suggests a particularly high rate of bias in the Chinese research record. A subsequent analysis in 2007 continued to find grossly inadequate standards of rigor in Chinese studies of Chinese medicine.

Given all the above caveats, the following sections address the science regarding acupuncture. They begin with conditions in which acupuncture research has been mostly positive, continue with those for which the record is
mixed, and conclude with those in which the tested form of acupuncture has not proved effective. Note that we also include studies of acupressure and electroacupuncture.

**Evidence-based Uses**

**Nausea and Vomiting**

Numerous studies have evaluated treatment on a single acupuncture point—P6—traditionally thought to be effective for relief of various forms of nausea and vomiting. This point is located on the inside of the forearm, about 2 inches above the wrist crease. Most studies have investigated the effects of pressure on this point (acupressure) rather than needling. The most common methods involve a wristband with a pearl-sized bead in it situated over P6. The band exerts pressure on the bead while it is worn, and the user can press on the bead for extra stimulation.

Although the research record is mixed, on balance it appears that P6 stimulation offers at least modest benefits for nausea. This approach has been studied in anesthesia-induced nausea and other forms of nausea.

**Anesthesia-induced Nausea**

General anesthetics and other medications used for surgery frequently cause nausea. Many controlled studies involving women who have had gynecologic surgery found that P6 stimulation of various types reduced postsurgical nausea compared to placebo.11,19,138,145,319,345

On the negative side, a double-blind, placebo-controlled study of 410 women undergoing gynecologic surgery failed to find P6 acupressure more effective than fake acupressure (both were more effective than no treatment).139 A small trial of acupuncture in gynecological surgery also failed to find benefit,12 as did three studies of acupressure for women undergoing C-section.146,187-188

Studies of acupuncture or acupressure in other forms of surgery have produced about as many negative results as positive ones.13,20,120,189,292

A 2004 review of the entire literature regarding P6 stimulation for postoperative nausea found a total of 26 studies.147 All of these studies suffered from significant flaws; however, on balance the reviewers found that stimulation of P6 does reduce postoperative nausea as compared to placebo. Similarly, a 2008 review of 6 placebo-controlled trials investigating the effectiveness of P6 stimulation on nausea and vomiting both during and after cesarean section found some benefit, though the authors concluded that the results were largely inconsistent.297

One particularly interesting aspect of studies of acupressure for postsurgical nausea is that here a single-blind study is probably as good as a double-blind study. If the acupressure wrist band is not put on till after anesthesia has begun, no amount of confidence or lack of it by the practitioner is likely to alter the placebo effect experienced by the unconscious patient. Thus, studies of acupressure/acupuncture for this condition have a higher potential validity than studies for any of the other conditions listed below. The fact that benefits have been seen strongly suggests that stimulation of P6 does in fact affect nausea. That there is no clear physiological reason why this should be so makes this an intriguing finding, even if the benefit is too slight to make much real difference in postoperative care.

**Nausea and Vomiting of Pregnancy**

Several controlled studies have evaluated the benefits of acupressure or acupuncture in the nausea and vomiting of pregnancy, commonly called morning sickness. The results for acupressure, though not acupuncture, have generally been positive.229

For example, a double-blind, placebo-controlled study of 97 women found evidence that wristband acupressure may work.21 Participants wore either a real wristband or a phony one that appeared identical. Both real and fake acupressure caused noticeable improvement in more than half of the participants. However, women using the real wristband showed better results in terms of the duration of nausea. Intensity of the nausea symptoms was not
significantly different between groups.

These results are consistent with other studies of acupressure for morning sickness, though two studies failed to find benefit for severe morning sickness. However, one large trial of acupuncture instead of acupressure failed to find benefit. This single-blind, placebo-controlled study of 593 pregnant women with morning sickness compared the effects of traditional acupuncture, acupuncture at P6 only, acupuncture at “wrong” points (sham acupuncture), and no treatment. As noted earlier, the placebo effect of acupuncture can be very strong. Women in all three treatment groups (including the fake acupuncture group) showed significant improvements in nausea and dry retching compared to the no-treatment group. However, neither form of real acupuncture proved markedly more effective than fake acupuncture. And, in a review of 8 trials involving over 1,200 pregnant women, there was no reliable evidence that acupressure or acupuncture reduced nausea and vomiting. One of these studies involving 230 pregnant women, though, did find that nausea improved over time with the use of electrostimulation, in which a mild electrical current passes to the acupuncture point.

Other Forms of Nausea

A single-blind, placebo-controlled study found acupressure helpful for motion sickness, though a similar study did not. A single-blind, placebo-controlled trial of 104 people undergoing high-dose chemotherapy for breast cancer found that electrical stimulation on P6 significantly reduced episodes of vomiting. A small study in children receiving chemotherapy for a variety of cancers suggested that acupuncture may reduce the need for antinausea medication. Similar improvements were seen in four other studies of acupuncture or acupressure in patients having chemotherapy or radiation. In a small sham-controlled study, acupressure wristbands showed promise, although the benefit seen just missed the conventional cutoff for statistical significance. However, equivocal or absent effectiveness were seen in three other studies of wristbands, and one study failed to find more benefit with real acupuncture than fake acupuncture.

Tendonitis

Several small controlled studies have found acupuncture helpful for tendonitis. For example, a single-blind, placebo-controlled trial of 52 people with rotator cuff (shoulder) tendonitis found evidence that acupuncture is more effective than placebo. In another study, 117 people with rotator cuff injury (including tendonitis) were randomized to receive corticosteroid injections plus exercise or 10 acupuncture treatments plus exercise. Both groups experienced similar improvements in shoulder function and pain. Finally, in a sizable randomized trial, 425 patients receiving physical therapy for their persistent shoulder pain were divided into two groups: one received single-point acupuncture while the other received a sham treatment (mock transcutaneous electrical nerve stimulation) for three weeks. The acupuncture group showed significant improvement over the control group one week after treatment. However, not all studies have been positive. In a small trial of 32 patients with rotator cuff tendonitis, acupuncture was no better than placebo TENS (transcutaneous electrical nerve stimulation) when added to exercise.

Benefits were also seen in four other studies of people with shoulder or elbow tendonitis. In a study of 82 people with elbow tendonitis, deep acupuncture was more effective than shallow acupuncture placebo in the short term, but by 3 months there was no difference between the groups. A comparative trial of 20 people found weak evidence that electroacupuncture may be more effective than ordinary acupuncture for elbow tendonitis. And a 2004 systematic review found a total of five positive controlled studies on acupuncture for tennis elbow and concluded that "strong evidence" supports the use of acupuncture for this condition. However, this characterization of the evidence as strong would seem to be premature. For the reasons described in the beginning of this section, virtually all studies of acupuncture are single-blind, and such studies (except when performed on anesthetized patients) cannot exclude the possible effect of confidence conveyed by practitioners performing valid treatment as compared to lack of confidence by those delivering sham treatment. Two other trials failed to find laser acupuncture effective as compared to either sham or other comparable treatments in patients with elbow tendonitis. And, 8 sessions of true acupuncture were no better than sham acupuncture in 123 subjects treated for persistent arm pain due to repetitive use.
Pregnancy Support

As noted above, acupuncture has shown some promise for reducing symptoms of morning sickness. This treatment has additionally been studied for aiding other aspects of pregnancy.

A number of studies, including a 2011 review of 13 trials, found evidence that acupuncture is helpful in reducing labor pain. In a study involving 212 women in active labor, researchers found that, in countries where epidural anesthesia is not available, acupuncture can help to reduce pain compared to standard care early in labor.

Not all of the evidence supports the use of acupuncture for labor pain, though. For example, in one study, sterile water injections were found to be more effective than acupuncture for lower back pain and relaxation during labor. It is unclear whether or not the patients in the study knew which treatment they were receiving at the time. In a placebo-controlled trial and one review of 10 mostly low quality trials, real acupuncture was no better than sham acupuncture in relieving pelvic pain during pregnancy prior to labor. Along the same lines, a study involving 105 women giving birth to their first baby found no differences in the need for pain relief between real or sham acupuncture.

A study of 45 pregnant women found that use of acupuncture on the expected birth due date significantly sped up the actual date of delivery. However, this trial used a no-treatment control group instead of sham acupuncture. Another study that failed to use sham treatment found minimal evidence that use of acupuncture may help stimulate normal term labor. A study of 106 women evaluated whether acupuncture can speed up delivery after prelabor rupture of membranes (“water breaking” too early), and failed to find benefit. However, again no adequate control group was used; this is equally a problem for a negative as for a positive study. Finally, in a placebo-controlled trial, real acupuncture administered for 2 days prior to a planned induction of labor (artificial stimulation of labor) was no better than sham acupuncture at preventing the need for induction or shortening the time of labor.

Acupuncture has also been studied for converting breech presentation of the unborn infant to normal positioning. In a study of 240 women at 33 to 35 weeks gestation, acupuncture combined with moxibustion caused the breech presentation to convert in 54% of women, while only 37% of women in the no-treatment control converted. Yet again, placebo acupuncture would have been better than no treatment. A much smaller study also found benefits with acupressure. In 2008, researchers published a review of 6 randomized controlled trials that investigated acupuncture-like therapies (moxibustion, acupuncture, or electro-acupuncture) applied to a specific point (BL 67). They concluded that these therapies were effective at decreasing the incidence of breech presentations at the time of delivery. Again, however, not all of these studies employed a sham acupuncture group for comparison.

According to a small, randomized trial, acupuncture may also help to reduce pain after labor in women undergoing an episiotomy.

Osteoarthritis

Acupuncture has shown inconsistent benefit as a treatment for osteoarthritis. While the results of numerous smaller studies suggest that acupuncture is an effective treatment for osteoarthritis (of the knee, in particular), larger studies have generally found it be no more effective than sham (fake) acupuncture.

A 2006 meta-analysis (systematic statistical review) of studies on acupuncture for osteoarthritis found eight trials that were similar enough to be considered together. A total of 2,362 people were enrolled in these studies. The authors of the meta-analysis concluded that acupuncture should be regarded as an effective treatment for osteoarthritis.

However, as it happens, one study comprised almost half of all the people considered in this meta-analysis, and it failed to find real acupuncture more effective than sham acupuncture. In this study, published in 2006, 1,007 people with knee osteoarthritis were given either real acupuncture, fake acupuncture, or standard therapy over six weeks. Though both real acupuncture and fake acupuncture were more effective than no acupuncture, there
was no significant difference in benefits between the two acupuncture groups. In general, larger studies are more reliable than small ones. For this reason, it is always somewhat questionable when meta-analysis combines one very large negative study and a number of smaller positive ones to come up with a positive outcome.

Another review, published in 2007, nuanced its conclusions differently. It concluded that real acupuncture produces distinct benefits in osteoarthritis as compared to no treatment, but that fake acupuncture is very effective for osteoarthritis too. When comparing real acupuncture to fake acupuncture, the difference in outcome—while it might possibly be statistically significant—is so trivial as to make no difference in real life. In other words, virtually all of the benefit of acupuncture for osteoarthritis is a placebo effect.

We might add that the apparent slight statistical difference between real and fake acupuncture could easily have been due to problems of single-blind studies, as discussed earlier. To review, acupuncturists who know they are performing real acupuncture may subconsciously convey more confidence to their patients than those who know they are performing fake acupuncture. The history of medical studies makes it clear that such unconscious communications can greatly affect results; since, in fact, the evidence shows only a minute difference between the results of real and fake acupuncture, it is quite possible that this transmission of confidence (or lack of it) is the entire cause of the difference, and that the specific techniques and theories of acupuncture themselves play no role at all.

Headache

Acupuncture has shown some promise for various types of headaches, including migraines and tension headaches; however, the research record remains mixed, and the best designed studies have generally failed to find benefit. In a 2008 analysis of 5 randomized controlled trials that were considered highest in quality, researchers determined that real acupuncture has limited benefit over sham acupuncture for tension headache. Subsequently, in a large randomized trial involving 3,182 headache patients, the group that received 15 acupuncture sessions over 3 months experienced significantly fewer headache days and less pain compared to the group receiving usual care. However, there was no placebo group. While it is clear that many headache patients benefit from acupuncture, at present it is unclear whether or not this presents more than a placebo effect.

Neck Pain

A 2006 review of the literature found 10 controlled studies of acupuncture for chronic neck pain. The pooled results suggest that acupuncture may be more effective than fake acupuncture, at least in the short term. However, the overall quality of the studies was low. Other randomized trials have found that real acupuncture (versus placebo treatment) improved the quality of life in people with chronic neck pain.

Interestingly, in a study of 177 people with chronic neck pain, fake acupuncture proved more effective than massage! In a pilot study, 10 weeks of acupuncture combined with physical therapy appeared to be more effective than either acupuncture or physical therapy alone for chronic neck pain, at least over the short-term.

There has been some study of acupuncture for acute neck pain; however, in one of the best of these studies, use of laser acupuncture failed to provide benefit for whiplash injuries. In another study, 124 people with chronic or acute whiplash were randomized to receive 12 sessions of real or sham electroacupuncture. While those receiving real electroacupuncture did have less pain, the results were not clinically significant, and there were no improvements in disability or quality of life.

Dental Procedures

The evidence regarding acupuncture treatment of dental pain is mixed. A literature review published in 1998 identified four meaningful studies on acupuncture for reducing pain during dental procedures. Three of the studies found positive results, but the largest (with 110 participants) found no benefit. It was largely on the basis of this review that acupuncture was discussed in the media as a “proven” treatment for dental pain. However, these mixed results hardly constitute proof.

More recent studies have also shown mixed results. At present, therefore, the available evidence does not
provide a reliable basis for concluding that acupuncture is effective for dental pain.

Chemical Dependency

Although some animal studies suggest that ear acupuncture or electroacupuncture may have some benefits for chemical dependency, study results in humans have been mixed at best, with the largest studies reporting no benefits.

For example, while benefits were seen in a much smaller single-blind trial, a single-blind, placebo-controlled trial that evaluated 620 cocaine-dependent adults found acupuncture no more effective than sham acupuncture or relaxation training. Similarly, a single-blind, placebo-controlled study enrolling 236 residential clients found no benefit for cocaine addiction from ear acupuncture. Finally, in a placebo-controlled trial involving 83 people addicted to drugs attending a methadone detoxification clinic, the addition of ear acupuncture did not improve withdrawal symptoms or cravings. Methadone, a relatively weak narcotic, is commonly used to treat narcotic addiction over the long-term.

The situation is much the same for alcohol addiction. A single-blind, placebo-controlled study of 503 alcoholics failed to find evidence of benefit with 3 weeks of ear acupuncture. In addition, a 10-week, single-blind, placebo-controlled study of 72 alcoholics found no difference in drinking patterns or cravings between sham acupuncture and real acupuncture groups. There are two other small trials that also failed to find significant benefits. However, one single-blind trial of 54 people did find some evidence of improvement.

A single-blind, controlled trial of 100 people with heroin addiction evaluated the potential benefits of ear acupuncture. However, a high dropout rate makes the results difficult to interpret.

In a 1999 meta-analysis of 12 placebo-controlled trials, acupuncture was not found more effective than sham acupuncture for smoking cessation. An observer-blind, sham-controlled study of 330 adolescent smokers also found no benefit. A 2011 analysis of 12 trials (involving over 2,000 people) found that the people who received real acupuncture had more short-term success in quitting smoking compared to those in the sham group. But, over the long-term, there was no difference between the groups. From other studies in the same analysis, researchers also found no evidence that acupuncture was more effective, over the short- or long-term, than nicotine replacement therapy (eg, gum or patch) or psychological interventions.

While most addiction studies involve ear acupuncture, a randomized trial compared real versus sham acupuncture on body points. The study found no difference in quit rates, depression, or anxiety. One study found that acupuncture may not be effective on its own, but may (in some unknown manner) increase the effectiveness of stop-smoking education. In this sham-controlled study of 141 adults, acupuncture plus education was twice as effective as sham acupuncture plus education and four times as effective as acupuncture alone. However, these benefits were only seen in the short term. At long-term follow-ups, the relative advantage of acupuncture disappeared.

Back Pain

Thus far, research has not produced convincing evidence that acupuncture is effective for back pain. Many studies widely cited as providing such evidence were actually invalid due to lack of a proper control group. There is no doubt that people with back pain given acupuncture report benefits, but the problem is that people given fake acupuncture also experience benefits, often to a similar degree. In a review of 23 randomized trials involving over 6,000 patients with chronic low back, researchers concluded that acupuncture is more effective than no treatment for short-term pain relief, but there was no significant difference between the effects of true and sham acupuncture. They also found that acupuncture can be a useful addition to conventional therapies.

A 6-month patient- and observer-blind trial of 1,162 people with back pain compared real acupuncture, fake acupuncture, and conventional therapy. Both real and fake acupuncture proved to be twice as effective as conventional therapy according to the measures used. However, there was only a minimal difference between real and fake acupuncture. These results do not, in fact, indicate that acupuncture is effective per se; rather, it shows the significant power of acupuncture as a placebo.
Similarly, in a single-blind, controlled study (using sham acupuncture and no treatment) of 298 people with chronic back pain, use of real acupuncture failed to prove significantly more effective than sham acupuncture. Also, in a fairly large randomized trial involving 638 adults with chronic back pain, there was no difference in pain at one year in patients receiving real compared to fake acupuncture (with neither group improving significantly over standard care). Both real and sham acupuncture were, however, associated with improved function at one year. Other studies enrolling a total of over 300 people have also failed to find benefit.

A trial compared the effects of acupuncture, massage, and education (such as videotapes on back care) in 262 people with chronic back pain over a 10-week period. The exact type of acupuncture and massage was left to practitioners, but only 10 visits were permitted. At the 10-week point, evaluations showed benefit with massage but not with acupuncture. One year later, massage and education were nearly equivalent, and both were superior to acupuncture.

One small study found chiropractic spinal manipulation more effective than anti-inflammatory medication or acupuncture for low back pain.

In another trial, acupressure-style massage was found to be more effective for back pain than Swedish massage. However, Swedish massage has not been proven effective for back pain, so this does not prove that acupressure-style massage is effective.

Two single-blind, placebo-controlled trials, one with 30 participants and another with 60, also failed to find evidence of benefit.

Two studies did find possible slight benefits with electrical acupuncture for chronic low back pain. An additional study found acupressure more effective than physical therapy for low back pain, and another found some potential benefit with electric acupuncture.

Low level laser therapy (LLLT) is a technique similar to electro-acupuncture that uses precision laser energy instead of electricity conducted through a needle. In a detailed review of 7 randomized trials, researchers were unable to draw any conclusions regarding the effectiveness of LLLT for nonspecific low back pain.

Several other studies have compared acupuncture to other treatments for back pain, such as transcutaneous electrical nerve stimulation (TENS), physical therapy, and chiropractic care, and found them equally effective. However, because TENS, physical therapy, and chiropractic care have not been proven effective for back pain, studies of this type cannot be taken as evidence that acupuncture is effective. One study did find acupressure massage more effective than standard physical therapy; however, it was performed in a Chinese population that may have had more faith in this traditional approach than in physical therapy.

Menstrual Pain

One small double-blind, placebo-controlled study found real acupuncture more effective than sham acupuncture for menstrual pain. (This study used nonacupuncturists given real or fake acupuncture protocols to apply, unbeknownst to them.) In addition, a controlled study of 61 women evaluated the effects of a special garment designed to stimulate acupuncture points related to menstrual pain. Unfortunately, in this latter study, researchers chose to compare treatment to no treatment, rather than to sham treatment. For this reason, the results (which were positive) mean little.

In yet another trial, a seed-pressure method of auricular acupressure appeared to improve menstrual pain compared to sham auricular acupressure in 74 women. The potentially inadequate blinding of participants in this study, however, may have limited these results. Indeed, in a review of 30 controlled trials on menstrual pain, researchers were unable to draw conclusions about the effectiveness of acupuncture and similar treatments for menstrual pain due to widespread study design problems. And, while a review of 27 trials with 2,960 patients concluded that acupuncture might be more effective than medications or herbs for relieving menstrual pain, the studies were of limited quality.

A smaller, but more recent review from 2011 included 6 acupuncture trials involving 673 women and 4 acupressure trials involving 271 women. Acupuncture was associated with pain relief when compared to a
placebo (sham) control, anti-inflammatory medication (NSAIDs), and Chinese herbs. Similarly, acupressure was associated with symptom improvement when compared to placebo. As in previous reviews, however, researchers found enough weaknesses in the trials to recommended the need for more high-quality studies.

Stroke

Acupuncture is widely used in China for treatment of acute stroke. A few controlled studies have been published over the last 10 years, but the best-designed and largest studies failed to find benefit.\textsuperscript{97,127,169,206-207,279,290,344} For example, a single-blind, placebo-controlled trial of 104 people who had just experienced a stroke failed to find any benefit with 10 weeks of twice-weekly acupuncture.\textsuperscript{97} Similarly, a single-blind, controlled study of 150 people recovering from stroke compared acupuncture (including electro-acupuncture), high-intensity muscle stimulation, and sham treatment. All participants received 20 treatments over a 10-week period. Neither acupuncture nor muscle stimulation produced any benefits.\textsuperscript{114} A 10-week study of 106 people, which provided a total of 35 traditional acupuncture sessions, also failed to find benefit.\textsuperscript{127} Also, 92 patients who received either 12 acupuncture treatments or a comparable sham (fake) treatment demonstrated the same level of improvement up to one year later.\textsuperscript{279} Finally, a 2011 systematic review, which included 10 randomized trials and 711 patients who had a stroke, failed to find evidence that acupuncture (compared to sham treatment) helped with recovery.\textsuperscript{344}

A few studies did find benefit, but they were very small, and some did not use a placebo group.\textsuperscript{98-101} One trial of 62 patients found that a 3-week program of transcutaneous electrical stimulation of acupuncture points (beginning about 9 days after stroke) improved muscle tone and strength in the affected leg.\textsuperscript{316}

A large review including 56 mostly poor quality trials reported that acupuncture may benefit post-stroke rehabilitation (based on an analysis of 38 trials),\textsuperscript{328} and another review of 9 trials found limited evidence in support of moxibustion for stroke rehabilitation.\textsuperscript{335}

Surgery Support

Acupuncture has been explored as a means of reducing pain after surgery with encouraging but not unequivocal results. A double-blind, placebo-controlled study of 42 people undergoing arthroscopic knee surgery found that the use of acupuncture during surgery did not reduce pain levels during the subsequent 24 hours.\textsuperscript{54} Another double-blind, placebo-controlled trial of 50 women undergoing hysterectomy found no benefit with electroacupuncture,\textsuperscript{55} and a double-blind study of 71 people undergoing abdominal surgery failed to find acupressure helpful.\textsuperscript{60}

However, some benefits of acupressure were reported in a single-blind trial of 40 patients undergoing arthroscopic knee surgery.\textsuperscript{56} And, a small randomized trial involving 22 patients found that preoperative electroacupuncture, compared to sham transcutaneous electrical nerve stimulation (TENS), reduced pain and the need for pain medication after cardiac surgery.\textsuperscript{384} In addition, a special form of needle insertion called intradermal acupuncture reduced postsurgical pain in 107 people undergoing abdominal surgery.\textsuperscript{38} Ear acupuncture has also shown promise.\textsuperscript{215,273,375} For example, in an analysis of 5 trials, patients who received ear acupuncture (auricotherapy) did not use pain medication as much as those in the control groups (sham auricuiotherapy, placebo, or usual care).\textsuperscript{376} Finally, in a 2008 review of 15 randomized controlled trial, researchers determined that acupuncture (of the ear and other acupuncture points) is capable of reducing pain and the need for opioid medications (morphine and related agents) immediately following surgery compared with sham acupuncture.\textsuperscript{283}

Other Studied Uses

Musculoskeletal Pain

Bee venom acupuncture (BVA), which involves the injection of diluted bee venom directly into acupoints, has been used for the treatment of pain. A recent analysis of four well-designed, randomized trials, comparing bee venom plus classic acupuncture against saline injection plus classic acupuncture, found that the BVA-classic acupuncture combination was significantly more effective for musculoskeletal pain.\textsuperscript{272}
Insomnia

Acupressure and acupuncture have been tried for insomnia with mixed results. A single-blind, placebo-controlled study involving 84 nursing home residents found that real acupressure was superior to sham acupressure for improving sleep quality. Treated participants fell asleep faster and slept more soundly. In a similar study, researchers found that performing acupressure on a single point on both wrists for five weeks improved sleep quality among residents of long-term care facilities compared to lightly touching the same point. Another single-blind, controlled study reported benefits with acupuncture, but failed to include a proper statistical analysis of the results. For this reason, no conclusions can be drawn from the report. In another trial, 98 people with severe kidney disease were divided into three groups: no extra treatment, 12 sessions of fake acupressure (not using actual acupuncture points), and 12 sessions of real acupressure. Participants receiving real acupressure experienced significantly improved sleep as compared to those receiving no extra treatment. However, fake acupressure was just as effective as real acupressure. And, in a fourth randomized trial involving 28 women, six weeks of auricular (outer ear) acupuncture was more effective than sham acupuncture. In one study, magnetic pearls used to stimulate acupuncture points in the ear seemed to show some benefit as compared to nonmagnetic stimulation of ear points. A small, single-blind, placebo-controlled study of 60 adults with primary insomnia found that 3 weeks of electroacupuncture improved sleep efficiency and decreased wake time after sleep onset.

Chronic Fatigue Syndrome

A sham-controlled study found some evidence that acupuncture may be useful for chronic fatigue syndrome.

Anesthesia

Although anesthesia apparently performed entirely with acupuncture first raised Western interest in acupuncture, the original demonstrations of acupuncture anesthesia have been discredited. It now appears that if acupuncture has any anesthetic effect at all, it is extremely modest. At most, acupuncture may be capable of slightly decreasing the required dose of general anesthetic necessary to induce anesthesia (but even this has not been consistently seen in studies).

Crohn’s Disease

One study found possible marginal benefit with acupuncture and moxibustion for the treatment of Crohn’s disease.

Bladder Infections

A 6-month, single-blind, controlled study of 67 women with frequent bladder infections found that acupuncture therapy reduced the frequency of infection. Another study found that acupuncture may be helpful for hyperactive bladder (frequent need to urinate without the presence of an infection).

Allergic Rhinitis

A study of 52 people with allergic rhinitis (hay fever) found that acupuncture plus Traditional Chinese herbal treatment was slightly more effective than fake acupuncture plus fake Chinese herbal treatment. However, another study failed to find acupuncture alone beneficial for allergic rhinitis. Moreover, a carefully conducted review of 7 placebo-controlled trials failed to find convincing evidence for acupuncture’s effectiveness against allergic rhinitis.

Bell’s Palsy

A Chinese study found that acupuncture plus moxibustion was more effective for Bell’s palsy than drug treatment. But, in a review of 6 studies involving 537 Bell’s palsy sufferers, researchers could draw no conclusions about the beneficial effects of acupuncture due to poor study quality.
Menopause

The evidence has been mixed regarding whether acupuncture is beneficial for menopause. Five small controlled studies reported that acupuncture can improve menopausal symptoms. But, most of these studies suffered from significant problems in design or statistical analysis. 128,178,226, 234,251

Two trials failed to find acupuncture beneficial for hot flashes. 234,282 However, a trial of 175 perimenopausal and postmenopausal women concluded that adding acupuncture to usual care reduced hot flash frequency compared to usual care alone in the first four weeks after treatment. 330 And, a large randomized trial involving 267 post-menopausal women found that the addition of acupuncture to self-care advice significantly reduced the frequency and intensity of hot flashes in the first 12 weeks. 331,336 But, the benefits were lost 6 months later. In another, similar trial, 81 women were randomized to receive either 12 months of real acupuncture followed by 6 months of sham acupuncture or 6 months of sham followed by 12 months of real acupuncture. 386 After 6 months, the women in the treatment group reported fewer hot flashes compare to those in the sham group. This affect did not last, though. After 12 months, both groups reported a similar frequency of hot flashes.

A review of 6 trials did not find promising results. 315 True acupuncture was no more effective than sham acupuncture for menopause. And one small study found no benefit for the psychological distress associated with menopause.179

Cancer Support

Another small placebo-controlled study in breast cancer patients suffering from hot flashes due to their treatments suggested some benefit for acupuncture, though the results were inconclusive for similar reasons. 299 However, another study did not find acupuncture effective in these patients, 267 and a 2008 review of all existing studies on the subject concluded that the evidence does not support a beneficial effect for acupuncture in breast cancer patients suffering from hot flashes. 306

Acupuncture has been studied for use in cancer treatment support. In a small randomized trial of 43 breast cancer patients, 6 weeks of acupuncture twice-weekly reduced joint pain attributed to aromatase-inhibitor therapy. 325

Another small randomized trial of 70 patients found that acupuncture may decrease dry mouth and pain after neck dissection for cancer treatment. 332

A systematic review of 3 randomized trials involving 123 people with head and neck cancer found that real acupuncture was more effective than sham acupuncture in reducing the risk of dry mouth (xerostomia) due to radiation therapy. 379 A subsequent study also supports the use of acupuncture in reducing dry mouth in such patients. But, unlike the previous trial, this one compared acupuncture to standard care (rather than to sham treatment). 391

Many cancer patients suffer unrelenting pain, which is often challenging to effectively treat while maintaining an acceptable quality of life. Researchers reviewed 3 small, randomized trials involving 204 patients on the effectiveness of acupuncture for cancer-related pain. 340 The authors concluded that there was insufficient evidence to say whether or not that acupuncture is helpful in relieving this type of pain. More high-quality studies are needed.

People with cancer often experience fatigue. Acupuncture has shown a bit of promise for improving this symptom. 266

Fibromyalgia

A 2006 review of acupuncture for treatment of fibromyalgia found five controlled studies, none of which were of high quality. 235 The authors of another review of 7 trials were unable to determine the effectiveness of acupuncture for fibromyalgia due to the unreliability of the studies. 234 Overall, the results do not provide reliable evidence that acupuncture is helpful.

Depression, Anxiety, and Stress
Evidence for acupuncture’s effectiveness for depression has been mixed. In a study of 151 depressed patients, twelve sessions of acupuncture failed to prove more effective than fake acupuncture. However, another sham-acupuncture controlled trial evaluated 43 people with depression and 13 people with generalized anxiety disorder. The results suggest that 10 (but not 5) acupuncture sessions can significantly improve symptoms. One study of 80 patients with major depressive disorder found that adding acupuncture to a lower dose of antidepressant (fluoxetine) improved anxiety and had a similar overall therapeutic effect as sham acupuncture with a higher dose of antidepressant. In a mathematical review of the results of 8 randomized trials, the impact of acupuncture on depression was unconvincing. But, in another review of 20 trials involving 2,000 patients with major depression, real acupuncture’s effectiveness was comparable to that of antidepressants, but was no more effective than sham acupuncture for this population.

Another trial compared real and sham ear acupuncture in healthy people and found some evidence that real acupuncture can relieve normal daily stress.

Impotence

A small study found acupuncture more effective than sham acupuncture for impotence.

Premenstrual Syndrome

A 2010 review of 9 mostly poor quality trials determined that there is currently insufficient evidence to conclude that acupuncture is effective for premenstrual syndrome.

In vitro fertilization

Although open trials appeared to show benefit, at least 3 controlled studies failed to find acupuncture helpful for improving the success rate of in vitro fertilization (IVF). A 2008 analysis of 7 randomized trials found that, on balance, acupuncture may significantly improve the odds of pregnancy in patients undergoing IVF. However, since not all of these studies used sham (fake) acupuncture as a control, the reliability of this conclusion is questionable. Moreover, a second analysis in the same year of 13 randomized controls trials investigating the effectiveness of acupuncture in 2,500 women undergoing a specialized IVF procedure, in which sperm is injected directly into the egg, found no evidence of any benefit. But the story does not end here. In a subsequent review of 13 trials, a different group of researchers concluded that acupuncture may improve the success rate of IVF, but only if it is used on the day of embryo transfer (when the fertilized egg is placed into the womb). According to this study, acupuncture is not effective when used up to 3 days after embryo transfer or when eggs are being retrieved from the ovaries.

Temporomandibular Joint

Acupuncture may be more effective than sham acupuncture and as effective as standard treatments for temporomandibular joint (TMJ) pain. One study of 110 people with pain found acupuncture at least as effective as standard occlusal splint therapy. Another small study involving 40 patients with TMJ pain, however, found no difference between placebo and low-level laser therapy (LLLT) directed at painful points; both groups benefited equally. But, in a double-blind, randomized trial comparing real LLLT with sham LLLT, the real therapy was more effective for TMJ pain after 8 sessions. Instead of needles, low-level laser therapy involves the use of laser energy directed on or off acupuncture points.

Weight Loss

Although acupuncture is widely used for weight loss, there is only weak, inconsistent evidence that it works.

Ulcerative Colitis

Acupuncture has shown some promise for reducing symptoms of ulcerative colitis and also sleep apnea.

Sports Performance
A single-blind trial tested acupuncture on a group of 36 healthy young men and found some evidence of improvement in sports performance. However, a single-blind, controlled study of 48 people found that use of acupuncture did not reduce muscle soreness caused by exercise.

Psoriasis

Although case reports suggest that acupuncture might be helpful for psoriasis, a controlled trial failed to find acupuncture more effective than fake acupuncture.

Kidney Disease

One study purportedly found that acupressure reduced fatigue in people with severe kidney disease. In fact, it found that both sham acupuncture and real acupuncture reduced fatigue as compared to no treatment, but that real acupuncture was not more effective than fake acupuncture.

Parkinson's Disease

One study found minimal benefits for Parkinson’s disease. Another study failed to find any benefits. And, in two comprehensive reviews of multiple clinical trials, independent sets of researchers concluded that there was currently no well established evidence for acupuncture’s effectiveness in this condition.

Vocal Cord Dysfunction

A Chinese study reported that acupuncture is helpful for vocal cord dysfunction.

Chronic Prostatitis

A study that reported acupuncture’s benefits for chronic prostatitis failed to use a control group and is, therefore, meaningless. However, another study found that real acupuncture was more effective than sham acupuncture at reducing the symptoms of chronic prostatitis both during treatment and for a 6-month period following treatment. Another study suggested that electroacupuncture may improve symptoms in men with chronic prostatitis (or a related condition called chronic pelvic pain syndrome), but this study was very small.

Shingles

After an acute attack of shingles, pain may linger for months or years, causing what is known as post-herpetic neuralgia. A single-blind, placebo-controlled study of 62 people with pain of this type failed to find any benefit with acupuncture.

Rheumatoid Arthritis

Two separate groups of researchers conducting detailed reviews of 8 randomized controlled trials found some beneficial effects of acupuncture for rheumatoid arthritis, but were unconvinced that it was more beneficial than sham acupuncture or other standard treatments.

Carpal Tunnel Syndrome

Acupuncture has also been studied as a treatment for carpal tunnel syndrome, a common nerve disorder affecting the wrist and hand. Over a 4-week period, 77 people with mild to moderate carpal tunnel syndrome were randomized to receive medication (prednisolone) or 8 sessions of acupuncture. During the 7-month and 13-month follow-ups, those in the acupuncture group reported a greater improvement in their symptoms compared to the medication group. In addition, researchers analyzed 6 low-quality, randomized trials investigating acupuncture (and similar therapies) for CTS. In two of those trials (144 subjects), acupuncture was slightly better at improving symptoms than cortisone (steroid) injections, a standard treatment for CTS.

Asthma
There have been numerous reports about acupuncture treatment for asthma, but most published studies are of low quality, with results being contradictory at best. One study failed to find acupuncture helpful for shortness of breath associated with advanced cancer.

HIV

Peripheral neuropathy (nerve pain in the extremities) is a common complaint in HIV infection. A placebo-controlled trial of 239 people with HIV found acupuncture no more effective than placebo in peripheral neuropathy. Interestingly, the study also tested drug therapy for peripheral neuropathy and found it ineffective, as well.

Gastrointestinal (GI) problems, like diarrhea and nausea, are common side effects for people with HIV who are receiving highly active antiretroviral therapy (HAART). One hundred and thirty HIV patients on HAART were randomized to receive 1 of 4 treatments: acupuncture plus relaxation therapy, acupuncture plus health education, sham acupuncture plus relaxation therapy, or sham acupuncture plus health education. After 4 weeks of treatment, the people in the acupuncture plus relaxation group experienced a greater improvement in their GI symptoms compared to the other groups.

High Blood Pressure

A substantial study (192 participants) failed to find acupuncture more helpful than fake acupuncture for high blood pressure. However, another study, this one enrolling 160 people, did report benefit. A much smaller study also reported benefits, but there were problems in its statistical analysis. In a review of 11 randomized controlled trials on the subject, researchers determined that acupuncture’s ability to lower blood pressure remains inconclusive.

Epilepsy

Acupuncture is probably not effective for epilepsy. A single-blind, controlled trial of individualized acupuncture for 34 people with severe epilepsy found no benefit, and subsequently, a comprehensive review of 11 studies found no reliable evidence of its effectiveness.

Raynaud's Phenomenon

A small study found no benefit with standardized acupuncture for Raynaud's phenomenon.

Colonoscopy

One controlled study failed to find electroacupuncture effective for reducing discomfort during colonoscopy.

Spinal Cord Injuries

A controlled study purportedly found acupuncture helpful for speeding recover in people with spinal cord injuries, but it failed to use a sham-acupuncture control group.

Tinnitus

Several controlled and open trials of acupuncture for tinnitus (ringing in the ear) found no benefit.

Irritable Bowel Syndrome

A well-designed, single-blind, placebo-controlled study of 60 people with irritable bowel syndrome compared traditional acupuncture to sham acupuncture. Over the 13-week study period, both groups improved to the same extent. A larger trial of 230 adults with IBS found that acupuncture (six treatments over three weeks) was not associated with improved symptoms or severity compared to sham acupuncture. Two smaller studies have also failed to find acupuncture more effective than placebo acupuncture.
Nursing

In a placebo-controlled trial, 60 nursing women received needle acupuncture, 56 women received laser acupuncture, and 60 women received placebo acupuncture. The results showed no differences in milk production. In a subsequent trial, 90 women were randomized to receive acupuncture (twice weekly for 3 weeks) or observation. Those in the acupuncture group were better able to maintain breast-feeding for the first 3 months compared to the control group. The lack of a placebo control in the latter trial, however, means the two studies are not comparable.

Colic

In one small study, light needling at one acupuncture point on both hands was more effective than no needling among 40 infants with colic.

Glaucoma

In a small trial, 33 people with glaucoma (a condition characterized by abnormally elevated pressure inside the eye) were randomized to receive real auricular acupressure (with massage) or sham acupressure (without massage). At weeks 3 and 4, subjects in the acupressure group did have an initial improvement in their intraocular pressure. At weeks 2-4, their visual acuity also improved. But, the results did not last long, and there were no significant differences between the two groups.

Autistic Spectrum Disorder

A review of 10 trials focused on the use of acupuncture as a potential treatment for autistic spectrum disorder. Three hundred and ninety children and teens (aged 3-18 years old) with autism received treatment from 4 weeks to 9 months. Some of the trials compared real acupuncture to a sham version, while other trials compared acupuncture and traditional treatment plus traditional treatment alone. The authors concluded that there was not enough evidence to support the use of acupuncture to improve the core symptoms of autism (eg, impaired social interactions or thought processes).

Cardiac Arrhythmia

Preliminary evidence suggests that acupuncture may help prevent abnormal heart rhythms in people with atrial fibrillation who have undergone cardioversion (an electrical shock is delivered to the heart to return it to a normal rhythm).

Bed-wetting

According to one small trial, laser acupuncture may help to reduce bed-wetting episodes.

What to Expect During an Acupuncture Treatment

Acupuncture therapy has its own style and atmosphere, both like and unlike an ordinary medical encounter. Your first session will begin with a thorough analysis of your condition and health history. If the acupuncturist practices according to the principles of TCM, you will be asked a number of questions about your specific complaint and your general health, including how well you sleep, digest your food, eliminate, and breathe, your energy level, and so forth. All of these factors are considered relevant. The acupuncturist may ask questions that seem to have little bearing on your condition, such as, “Do you tend to feel cold or hot most of the time?” TCM looks for overall patterns in both physical and emotional well-being, which guide the acupuncturist in developing a treatment plan that is specific not only for your symptoms, but for your overall health pattern.

Depending on your specific complaint and your individual symptom pattern, the acupuncturist may use only a few needles or as many as 20 or more. Acupuncture needle sizes are typically 32- to 36-gauge, which means they
are about ¼ mm in diameter, much smaller than a hypodermic needle. Unlike hollow hypodermic needles, acupuncture needles are solid, which allows them to penetrate the skin easily and relatively painlessly. Acupuncture needles may produce a mild pricking sensation when inserted, but sometimes you will feel nothing at all as the needle is inserted. The needles are generally inserted to a depth ranging from a few millimeters to ½ inch or so. Insertion depth is deeper at the more fleshy areas of the body, such as the thighs and buttocks.

Acupuncture needles are typically inserted through a plastic tube that guides the needle into the skin. This is a fairly modern needle insertion technique. Traditional freehand insertion is also used; most acupuncturists are trained in this method. Virtually all acupuncturists in the United States now use pre-sterilized, one-time-use disposable needles, which eliminate any risk of cross-infection.

The acupuncturist may twirl the inserted needles and ask you to say when you feel a mild achy, heavy sensation; or the area may feel slightly numb or tingly. These sensations, described in TCM as the arrival of Qi, are regarded as a positive response that will enhance the effectiveness of the treatment.

Whatever you feel, the sensation should be mild, not overly unpleasant, and should subside within a few minutes. If any needles are genuinely painful, inform the practitioner so he or she can adjust the depth or remove the needle altogether. The needles are generally left in place for 20 to 30 minutes. During this time, you should feel comfortable and relaxed, and you may fall asleep.

Acupuncturists may also employ a technique known as electroacupuncture, in which electrodes are attached to the needles and a mild current is applied. This is intended to increase the stimulation of the needle and is generally used for more painful conditions. Electroacupuncture produces a tingly, pulsating sensation. The acupuncturist can control the intensity and adjust it to a level that is comfortable for you.

Traditionally trained acupuncturists often use heat as well as needles to stimulate acupuncture points with a procedure called moxibustion, which involves a mixture of herbs rolled into a cigar-like shape. The roll is lit, and the burning end is held over the skin, allowing the heat to penetrate the area around the acupressure point. The moxa roll never touches the skin, so you will not be burned. The acupuncturist will ask you to let him or her know before it gets too hot. Moxibustion is generally quite pleasant. It is regarded as a "tonifying" treatment, which means it is intended to strengthen function.

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**How to Choose a Qualified Acupuncturist**

Acupuncture is a licensed health profession in 39 states and the District of Columbia. Most states require at least 3 years of training at an accredited school of acupuncture and passage of a national board certification exam administered by the National Certification Commission for Acupuncture and Oriental Medicine (NCCAOM). Most states grant the title Licensed Acupuncturist, Certified Acupuncturist, Registered Acupuncturist, or simply Acupuncturist. A few states allow acupuncturists who have a doctorate from an approved or accredited college to use the title Doctor of Oriental Medicine (D.O.M.) or Oriental Medical Doctor (O.M.D.).

In most states, medical doctors can practice acupuncture with no training; in many states, chiropractors may practice acupuncture with 100 or fewer hours of training.

Approximately one-third of the states that license acupuncturists require their clients to have a referral from a Western medical practitioner (an M.D., osteopath, chiropractor, or dentist) prior to or in conjunction with acupuncture treatment. In the remaining states, acupuncturists may accept patients without prior referral.

Training programs have become fairly standardized in recent years, so an acupuncturist with qualifications in one state has essentially the same training as in other states. If you are in a state that does not license acupuncturists, ask to see evidence that the acupuncturist has completed at least 3 years of training at an accredited institution. Check with your state medical board for the exact licensure title and requirements in your state.

**States That License Acupuncturists**
The following states license acupuncturists:

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The American Academy of Medical Acupuncture offers an acupuncturist referral list on their website.

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**Safety Issues**

Serious adverse effects associated with the use of acupuncture are rare. The most commonly reported problems include short-term pain from needle insertion, tiredness, and minor bleeding. There is one report of infection caused by acupuncture given to a person with diabetes.

Some acupuncture points lie over the lungs and insertion to excessive depth could conceivably cause a pneumothorax (punctured lung). Because acupuncturists are trained to avoid this complication, it is a rare occurrence.

A recent report from China contained an example of another complication caused by excessively deep needling. A 44-year-old man was needled on the back of the neck at a commonly used acupuncture point just below the bony protuberance at the base of the skull. However, the acupuncturist inserted the needle too deeply and punctured a blood vessel in the skull. The client developed a severe headache with nausea and vomiting; a CAT scan showed bleeding in the brain, and a spinal tap found a small amount of blood in the cerebrospinal fluid. The severe headache, along with neck stiffness, continued for 28 days. The man was treated with standard pain medication, and the condition resolved itself without any permanent effects.

Infection due to the use of unclean needles has been reported in the past, but the modern practice of using disposable sterile needles appears to have eliminated this risk.

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