

New Studies Confirm Acupuncture Relieves Pain

MRI Scans Provide Objective Evidence that Treatment Works

By Michael Devitt

For more than 2,500 years, acupuncture has been one of the world's most popular forms of health care. Only in the latter part of this century has the practice of acupuncture gained acceptance in North America, but the profession appears to have earned much respect in that short time.

A 1998 study published in the *Archives of Internal Medicine*, for example, showed that medical doctors refer their patients to acupuncturists more than any other "alternative" care provider;¹ the same study also revealed that 51% of medical doctors believe acupuncture to be efficacious and of value.

Numerous theories abound as to what makes acupuncture effective for pain. Whatever the mechanism may be, there have been few definitive studies relating to the efficacy of acupuncture for pain relief. A pair of new studies -- one conducted at the University of Heidelberg in Germany,² the other at the University of Medicine and Dentistry of New Jersey (UMDNJ)^{3,4} -- may have finally demonstrated the proof that acupuncture advocates have been looking for. The studies show objective evidence that acupuncture works as a form of pain relief and that certain types of acupuncture work better than others.

Acupuncture More Effective Than Placebo

In the Heidelberg study, 52 athletes suffering from shoulder pain were divided into a control group and an acupuncture group. Each group received eight 20-minute sessions over a four-week period. The project was a single-blind study; the acupuncturists who administered the needles were aware of the different treatments involved, but the subjects were not.

The acupuncture group received traditional acupuncture therapy, with needles inserted through a plastic ring affixed with plaster into a combination of 12 acupoints according to the patient's symptoms. The control

group were treated using a special "placebo-needle" designed by one of the researchers. The placebo needle had a blunt tip which only touched, but did not penetrate, the subject's skin. Patients in the control group would feel a small pricking sensation and "see" the needle being inserted without it actually doing so.

Patients were rated using the modified Constant-Murley score, assigning points to the level of the subject's pain; their ability to perform daily activities; the painless range of motion in their shoulder; and the maximum amount of power in their shoulder. Patients in the control/placebo group improved by an average of 8.37 points after receiving treatment. Scores from the acupuncture group, meanwhile, improved an average of more than 19.2 points after treatment. Seventeen patients in the acupuncture group (68%) gave the treatment a positive evaluation after the final treatment as opposed to only 14 patients (52%) in the control group.

Based on these results, the authors concluded that "acupuncture with penetration of the skin is more effective than placing the needles on similar sites." However, the authors were quick to point out the study's limits, stating that the treatment "only demonstrates the effectiveness of the needling procedure in rotator cuff tendinitis" and calling for a larger, double-blinded study to prove the effectiveness of acupuncture as opposed to placebo.

Acupuncture for Pain Relief

The New Jersey study, while smaller, produced similarly encouraging results. Twelve patients were monitored using functional magnetic resonance imaging (fMRI), a technology that reveals what parts of the brain are receiving increased blood flow. Increased blood flow to different areas of the brain indicates that those areas of the brain are being stimulated.

The patients were subjected to pain in the form of a tiny filament used to prick the inside or outside of their upper lip. Initial tests showed via fMRI that all 12 people reacted strongly to the pain stimulus, as there was an increased flow of blood to the subjects' parietal areas and brain stems.

Concurrently with being pricked with the filament, seven subjects received traditional acupuncture at the Hegu point, an acupoint located between the thumb and forefinger. The remaining five subjects received electroacupuncture at the Hegu point, with a low-level electrical current being delivered through the needle.

During 30 minutes of treatment, the patients rated their pain level on a scale of one to 10 every five minutes, with the fMRI continually monitoring their brains. In four of the seven subjects who received traditional acupuncture (57%), the fMRI showed considerably decreased levels of brain activity associated with the pain.

"We found activity subsided in 60 to 70 percent of the entire brain," said Wen-Ching Liu, an assistant professor of radiology at UMDNJ and a co-author of the study. "Interestingly, in each subject, we detected pain-induced activity in different areas of the brain."

The response was even greater among those who received electroacupuncture. Pain-related brain activity decreased in all five patients who received electrical stimulation, and those subjects showed a greater tolerance to pain than those who received traditional acupuncture treatment.

"We could see the brain activity associated with the pain subsiding even as the patients reported they were experiencing relief," added Dr. Huey-Jen Lee, the study's lead author. Lee noted that since the MRI definitively showed different brain activity, it was highly likely the increased tolerance to pain was real and not a placebo effect.

"The brain actually shows differences," Lee said, "and that is convincing."

Although the results of the study appear favorable for those who have been looking for proof that acupuncture works, Dr. Lee warned against jumping to conclusions. "It's still premature," she said of the study results. "We'd like to get more data."

Dr. Lee expects to conduct more studies in the near future, including a project to see whether acupuncture can help relieve chronic pain in cancer patients. While the researchers don't expect the treatment to be a panacea, they are optimistic that acupuncture could eventually be used to reduce the dosage needed for certain pain medications and non-steroidal anti-inflammatory drugs (NSAIDs), some of which carry less than desirable side-effects.

"It is important for Western medicine to recognize that these acupoints really mean something in regard to pain relief," Dr. Lee concluded. "So many people with pain, whether from cancer, headache or a chronic, unexplained condition, rely on medications such as morphine, which can become addicting. Acupuncture has no side effects, and other studies have shown the pain relief it provides can last for months."

References

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