

Patients With Tension Headaches Benefit From Acupuncture

By Michael Devitt, managing editor

While tension headaches usually aren't as debilitating as migraine headaches, they occur with much greater frequency; according to the National Institutes of Health, they are the most common type of headache experienced in the U.S.¹ They also have a tendency to recur, especially when a person is under stress. Patients who suffer from tension headaches often report feeling as if their head is being squeezed in a vice,² with tightness and pressure around the forehead, the temples, or the back of the head and neck. They may last as little as 30 minutes, or may linger with a person for days at a time.



The exact cause of tension headaches remains unclear. Traditionally, they have been attributed to muscle tension or spasms of the head, scalp, face or jaw, although changes in brain chemistry are also considered a contributing factor. Typically, tension headaches are treated with over-the-counter medications such as aspirin or ibuprofen; in severe cases, antidepressants or muscle relaxants may be used. However, these medications often fail to address the cause of the headache, and may not always be effective.

In the past few decades, acupuncture has been used to treat a variety of headache types, but its effectiveness in treating tension headaches has not been investigated as thoroughly as other interventions. A study published in the Aug. 13 issue of *the British Medical Journal*³ suggests that acupuncture can be a powerful instrument in relieving tension-type headaches, and that it produces effects comparable to those seen in more traditional forms of care.

In this randomized, controlled trial, researchers in Germany recruited 270 men and women ages 18 to 65, all of whom suffered from tension-type headaches at least 8 days per month in the previous 3 months and in the baseline period, and had experienced symptoms for at least the past 12 months. Participants were randomized into a true acupuncture group (comprised of 132 patients), a minimal acupuncture group (63 patients), or a control group (75 patients).

In both the acupuncture and minimal acupuncture groups, treatment consisted of twelve 30-minute sessions delivered over 8 weeks, with two sessions in each of the first 4 weeks, followed by one weekly session in the remaining 4 weeks. In the true acupuncture group, all patients were needled bilaterally at three "basic" points (unless explicit reasons for not doing so were given), with additional points selected on an individual basis, and a maximum of 25 needles inserted per session. Practitioners delivering acupuncture were instructed to achieve the *de qi* sensation if possible, and to stimulate needles manually at least once per session. In the minimal acupuncture group, at least five out of 10 predefined, distant nonacupuncture points were needled bilaterally and superficially; the needles were not stimulated, and *de qi* was not achieved. [See **Figures 1** and **2** for a listing of the points used in each group.] Patients in the control group did not receive any prophylactic treatment for a 12-week period after randomization, but did receive true acupuncture at the end of the study period.

Figure 1: Points Used, Acupuncture Group

Basic points

- GB 20
- GB 21
- Liv 3

Optional points

- Mainly frontal headache: LI 4, Du 23, extra points *yintang* and *taiyang*, ST 44, GB 2
- Headache mainly in the vertex: Du 20 or 23, extra point *si shen cong*
- Mainly neck pain: BL 10, 60 or 62, Du 14 or 19, SI 3 or 6
- Holocephalic pain with fatigue: extra point *taiyang*, SP 6 or 9, ST 36 or 40, Ren 12
- Worse with wet or cold weather: LI 4, Du 14, GB 3, SJ 6, GB 39
- Modalities wind, dampness, cold: LI 4, Du 14, SJ 6, GB 34
- Modalities cold, wind: LI 4, LU 7, SJ 5, Du 14

Figure 2: Points Used, Minimal Acupuncture Group

- Deltoideus - in the middle of the line insertion of *m. deltoideus* (LI 14) and acromion
- Upper arm - 2 *cun* laterally of LU 3
- Forearm - 1 *cun* ulnar of the proximal third of the line between H 3 and H 7
- Scapula - 1 *cun* laterally of the lower scapular edge
- Spina iliaca - 2 *cun* above *spina iliaca* anterior superior in the vertical line to the arch of left ribs
- Back I - 5 *cun* laterally of the spine of lumbar vertebra IV
- Back II - 5 *cun* laterally of the spine of lumbar vertebra V
- Upper leg I - 6 *cun* above the upper ridge of the patella (between the Spleen and Stomach meridians)
- Upper leg II - 4 *cun* above the upper edge of the patella
- Upper leg III - 2 *cun* dorsally of GB 31 (avoiding Bladder meridian)

In addition to acupuncture, patients in all three groups were allowed to treat acute headaches "as needed." Treatment was documented in a headache diary. Subjects also tracked the frequency and severity of headaches experienced during baseline, the 12 weeks after being randomized, and weeks 21 to 24 after randomization. To measure the long-term effects of acupuncture, the patients filled out a pain questionnaire before treatment, after 12 weeks, and after 24 weeks.

Results

"Compared with the waiting list control group," the researchers wrote, "patients receiving acupuncture or minimal acupuncture fared significantly better for most secondary outcome measures." For example, in the 4 weeks following treatment (weeks 9-12), patients in the acupuncture group reported suffering an average of 7.2 fewer days of headaches compared to the baseline period. This figure was nearly identical to those treated with minimal acupuncture (6.6 days), but significantly better than patients in the control group (1.5 fewer days of headaches).

In addition, the proportion of "responders" - those who reported at least a 50 percent reduction in the number of days with tension headaches - was higher among patients in the true acupuncture group than in the other two groups. In the true acupuncture group, the responder rate was 46 percent, compared to 35 percent and 4 percent in the minimal acupuncture and control groups, respectively. Headache scores (calculated as the sum of intensity ratings during days with headaches) in both acupuncture groups also

decreased dramatically from baseline, and continued to remain lower than the control group for the duration of the study.

Average Headache Scores Per Group*			
Period	True Acupuncture	Minimal Acupuncture	Control
Baseline	29.9	30.9	29.3
Weeks 9-12	15.8	17.2	26.4
Weeks 21-24	17.6	18.6	N/A

* Headache scores = sum of intensity ratings (1=mild, 2=moderate, 3=severe) of days with headache

Some questions were raised over the relatively minor differences in effectiveness between patients who received true acupuncture and those who received minimal acupuncture. The authors interpreted these findings to indicate that "point location and other aspects considered relevant for traditional Chinese acupuncture did not make a major difference" in the treatment of tension headaches. With regard to the minimal acupuncture technique, they surmised that superficial needling at sites distant from traditional acupuncture point locations could produce effects ranging from "local alteration in circulation" to physiological and chemical responses such as "release of neurotransmitters or activation of segmental and heterosegmental antinociceptive systems."

Despite the lack of significant differences between the types of acupuncture performed in the study, the scientists concluded, "A significant proportion of patients with tension-type headache benefited from acupuncture. They added, "The size of the effect seems comparable to those of accepted treatments for tension-type headache, and is larger than that found in most trials comparing placebo interventions with no treatment. Acupuncture was well tolerated, and improvements lasted several months after completion of treatment."

References

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3. Melchart D, Streng A, Hoppe A, et al. Acupuncture in patients with tension-type headache: randomised controlled trial. *British Medical Journal* Aug. 13, 2005;331:376-382.