

# The Affect of Acupuncture on the reduction of tension headaches

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**Abstract:**

Participants completed the Headache Disability Index Questionnaire (HDIQ) to determine if their headaches were severe enough to elicit a noticeable difference if the treatment was effective. Once the participants were screened they were then split into two groups a real acupuncture treatment group and a sham acupuncture group. The participants each receive four treatments. After the treatments the participants then complete a post treatment Headache Disability Index Questionnaire (HDIQ). We then compare the two disability scores and determine if there was a significant difference. Comparing the pre treatment scores to the post treatment scores in the real treatment group the data showed that there was an average decrease of 20.33% in disability. The sham group data showed that there was an average decrease of 14.5% in disability. However when you compared the two groups together there was an average decrease of 18% in disability no matter what treatment the participants received.



**Introduction:**

Acupuncture has been found to reduce the symptoms of tension headaches in cases that are three months or longer.<sup>1</sup> These findings indicate an effect that is significantly greater than placebo.<sup>2</sup> Another study showed that acupuncture for chronic pain, such as knee pain, low back pain and long term tension headaches, responded significantly better to real acupuncture than to sham treatment. This was seen short term and long term.<sup>3</sup> Each study showed an effect on tension headaches with their own acupuncture protocol. The Headache Disability Index Questionnaire (HDIQ) will be used to determine the outcomes of the treatments. The HDIQ is derived from the Henry Ford Hospital Headache Disability Inventory (HDI). The HDI needs a 29-point change (95% confidence interval) or greater in the total score from test-retest must occur before the changes can be attributed to treatment effects.<sup>4</sup>

**Materials and Methods:**

Ten participants with history of headaches, 7 men and 3 women approximately all between the ages of 18-32, were included in this study. For participants to be qualified to be in the study must have had greater than 10% result on the Headache Disability Index Questionnaire. Participants must have also been naive to acupuncture treatment points as well as willing to be treated with needles. Participants were excluded from the study if: their Headache Disability Index Questionnaire score was less than 10%, they were currently ill at the time the study was conducted, they had been diagnosed with any form of cancer in their past medical history, they are taking medication for their current headaches, or they were currently taking more than 3 medications for any condition.

To quantify the impact of headache of daily living, we developed a 25-item headache disability inventory (HDI). The alpha version of the HDI (alpha-HDI) consisted of 40 items, each requiring a "yes" (four points), "sometimes" (two points), or "no" (zero points) response based on items derived empirically from case history responses of subjects with headache. From the alpha-HDI, we derived a 25-item beta version (beta-HDI) with the items sub grouped into functional and emotional subscales. The internal consistency/reliability was strong, as was construct validity. The test-retest reliability for the beta-HDI was acceptable for the total score and functional and emotional subscale scores. A 29-point change (95% confidence interval) or greater in the total score from test-retest must occur before the changes can be attributed to treatment effects. The HDI is useful in assessing the impact of headache, and its treatment, on daily living.<sup>4</sup>

The participant walked into the research room and was met by a co-investigator of the study. The patient completed a history questionnaire and a Headache Disability Index Questionnaire. After completion of the history questionnaire, a co-investigator determined if the subject was qualified for the study based on absence of exclusion criteria. After completion of the Headache Disability Index Questionnaire, a co-investigator calculated the index score and determined if the subject was qualified to participate in the study. If qualified, the participant was instructed to read and sign the consent form.

The participant was then placed into either the treatment group or the sham group through random assignment. This was achieved by opening up a random book that was obtained from the library. The letter of the very first



word on left hand page was used to determine the group placement of the participant; if the word started with the letter A-M the participant was placed in the treatment group, if the word started with the letter N-Z the participant was placed in the sham group.

The patient was asked to sit in the chair provided and the treatment areas were cleansed with an alcohol wipe. Depending on which group the participant had been placed in, they then received either the 5-point acupuncture treatment or 3-point sham treatment. The five point acupuncture protocol was the real treatment which included the following points: GV 14, GB20 bilaterally, and GB14 bilaterally. The three point sham group consisted points that did not lie on any known acupuncture points or meridians. The patient's determined group was silently relayed to the deliverer. The treatment/sham was given by Dr. Daryl Ridgeway, who is a licensed Doctor of Chiropractic as well as a licensed chiropractic acupuncturist. The treatment/sham lasted 15 minutes, after which the needles were removed. The treatment areas were then wiped by alcohol wipes to clean the treatment areas. The participant was instructed to come back for three more subsequent treatments with at least one day in between each treatment for a total of four treatments in a two week time period. On the last visit, the participant completed the Headache Disability Index Questionnaire following the treatment.

## Results:

Scores from the Headache Disability Index Questionnaire from the initial and final visits were compared to determine effectiveness of the treatment. The initial Headache Disability Index Questionnaire (HDIQ) scores ranged from 67% to 25% disability for all treatment types. The post treatment Headache Disability Index Questionnaire (HDIQ) scores ranged from 38% to 4% disability for all treatment types. The average score for the pre treatment Headache Disability Index Questionnaire (HDIQ) was 40.9% disability for all treatment types. The average score of the Headache Disability Index Questionnaire (HDIQ) was 22.9% disability for all treatment types. Receiving any treatment at all showed an improvement of 18% in disability.

There were six participants who received the real treatment that finished the study. Their average score on the pre treatment Headache Disability Index Questionnaire (HDIQ) was 45.3% disability. Their average on the post treatment Headache Disability Index Questionnaire (HDIQ) was 25% disability. This is a decrease of 20.33% in disability with the utilization of the real treatment.

There were four participants who received the sham treatment who finished the study. Their average score on the pre treatment Headache Disability Index Questionnaire (HDIQ) was 34.2% disability. Their average on the post treatment Headache Disability Index Questionnaire (HDIQ) was 19.75% disability. This is a decrease of 14.5% in disability with the utilization of the sham treatment.





	Before Sham	Tx	After Sham	Tx
	25		4	
	29		29	
	29		33	
	54		13	
Ave. Disability	34.25		19.75	

	Before Real	Tx	After Real	Tx
	42		33	
	42		38	
	67		25	
	29		33	
	42		13	
	50		8	
Ave. Disability	45.33333333		25	

	Before Tx	After Tx
	50	8
	42	13
	54	13
	29	33
	29	29
	29	33
	25	4
	67	25
	42	33
	42	38
Ave. Disability	40.9	22.9

**Discussion:**

According to our data any treatment at all would benefit the subject with a decrease in headache disability. The decrease of 18% is a significant drop in disability, it brings the average score from a moderate disability to a mild disability rating. As we look at the difference between the real acupuncture and the sham acupuncture we see improvements in both but there is more improvement in the real acupuncture group. This is expected, however there is not a significant difference in improvement between the groups. The real acupuncture group showed a 20% decrease while the sham only showed a 15% decrease in the score, which is only a 5 % difference in improvement which is not clinically significant.

This study would be more significant if we would have had more participants. Having only ten participants does not give us a large enough sample size to correlate it to the general public. Plus because the study was done at a chiropractic college the students were open to acupuncture and believed it would work. This thought process would make the placebo effect larger. We did not have lay people that may be a little more hesitant about the procedure, which would lower the placebo effect.

**Conclusion:**

The results of this study demonstrated the positive effect of acupuncture on the reduction of functional disability of tension headaches. This study is a good starting point for many more in depth trials and research projects.



## References:

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