The effect of acupuncture on cervical kinesthetics in subjects without neck pain: A pilot study (project completed by **Wynd S, Koby B, Boriek A**)

Background: Evidence suggests that acupuncture may represent an alternative complimentary therapy modality for the management of acute neck pain. Unfortunately, the use of subjective outcome measures represents a significant limitation in most published studies.

Purpose: To examine cervical kinesthetics (using head repositioning accuracy (HRA)) and pain threshold (PPT) in subjects without neck pain before and after acupuncture.

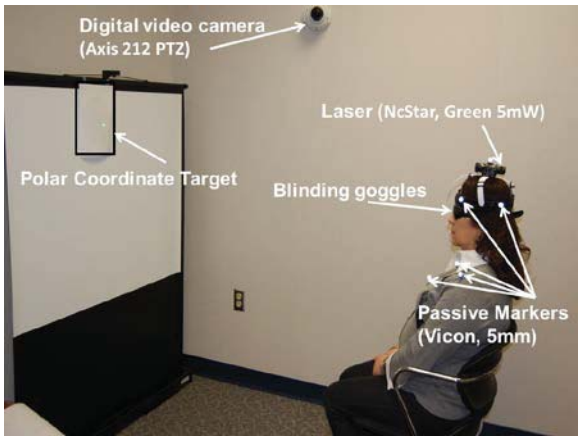

Figure 1: Head repositioning accuracy (HRA) system.

Methods

This study is a single-blinded randomized sham-control pilot trial. Subjects had their active cervical range of motion (ROM), their HRA (Figure 1), and their PPT measured. Descriptive statistics for the subject demographics and changes in the pre- and post-treatment values for the cervical spine ROM, HRA, and pain pressure threshold were computed, and the mean and standard deviation of these changes were determined for each treatment.

Results:

In total, 16 healthy subjects (6 female, 10 male) were recruited to the study. There were no significant differences between sham treatment group and the acupuncture treatment group for HRA (Figure 2), PPT, or ROM. However, both the sham treatment group and the acupuncture treatment group showed improvements.

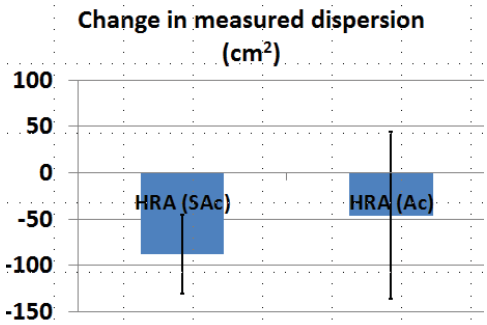

Figure 2: HRA results for sham acupuncture (SAc) and acupuncture (Ac). A negative result indicates that the post treatment dispersion was smaller than the pre-treatment dispersion, indicating an improved repositioning accuracy.

Limitations:

This study represents a pilot trial to examine the use of HRA as a quantitative outcome measure. The sample size for this project was small, and therefore statistically under-powered. This study also examined the treatment effect of acupuncture and sham acupuncture; however, the sham acupuncture points were the same points as the acupuncture points, and thus there may have been a treatment effect associated with the sham treatment. Finally, the subjects in this study did not have any neck pain, so the observed improvements in HRA may not directly translate to the improvements that may be observed in patients with neck pain.

Conclusions:

HRA, PPT, and ROM are not affected by acupuncture in healthy subjects; however, there was a trend towards improved HRA and ROM in both treatment groups, while the PPT tended towards decreasing.