

英国中医药学会

# The Association of Traditional Chinese Medicine and Acupuncture UK

## TCM Research Updates

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## Investigate physiologic function of meridians by changes in Ryodoraku values with acupuncture, moxibustion, and ice stimulation on Zusanli acupoints

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3373887/>

Y Lee. BMC Complement Altern Med. 2012; 12(Suppl 1): P81. June 2012.

Pathways and characteristics of meridians have been demonstrated by many studies, but the physiological function is still unclear. The Ryodoraku instrument is used to measure skin electrical resistance, which reflects the bioenergy of meridians. We try to investigate the function of meridians by the change in Ryodoraku values with acupuncture, moxibustion, and ice stimulation.

### Methods

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M.E.A.D. was used as a measurement tool. Thirty healthy volunteers from the University were recruited. We measured once every week and twice every time in a 30 minute interval. In the first week, 30 subjects sat and rested during the interval, which served as the control group. We compared these two measurements in the first week by reliability analysis. In the second week, we stimulated both Zusanli acupoints for 20 minutes with acupuncture during the interval (acupuncture group). In the third week, we

stimulated them by ice (ice group). In the fourth week, we stimulated them by moxibustion (moxibustion group). We analyzed the change of Ryodoraku values between the four groups.

## Results

The correlation coefficients are between 0.79854 and 0.93207 in reliability analysis. Ninety-six percent have good to excellent test-retest reliability in the interval of 30 minutes. The average changes of the control group dropped most significantly. The changes in the acupuncture group both rose and dropped. The changes in the ice group dropped in all

## 2Hz Electro-Acupuncture at Yinlingquan (SP9) and Ququan (LR8) Acupoints Induces Changes in Blood Flow in the Liver and Spleen

<http://www.worldscientific.com/doi/abs/10.1142/S0192415X12500061>

Wen-Cheng Chou et al, *Am. J. Chin. Med.* 40, 75 (2012).

According to the principles of traditional Chinese medicine, channels and collaterals within the body provide pathways through which qi and blood travel, and each channel or collateral is linked with a specific organ. The Yinlingquan (spleen 9, SP9) and Ququan (liver 8, LR8) acupoints represent the sea points of the spleen and liver meridians, respectively, from which qi and blood flow into their specific visceral organs. The purpose of this study was to investigate the changes in blood flow/perfusion in the liver and spleen resulting from the application of 2 Hz electro-acupuncture (EA) to the Yinlingquan (SP9) or Ququan (LR8)

meridians, especially stomach meridians. The changes in the moxibustion group raised in all meridians, especially urinary bladder meridians.

## Conclusion

To use the Ryodoraku instrument objectively, the operator should pass test-retest reliability to confirm the consistency of the data. The time to measure must be fixed, but it may not be fixed to see the change of Ryodoraku values at the interval of 30 minutes. We might presume that meridians play an important role in body temperature regulation and it is worth further study.

acupoints. A total of 18 Sprague-Dawley rats were randomly divided into three groups of six rats each as follows: sham group receiving sham EA; Yinlingquan (SP9) group receiving 2 Hz EA, applied at bilateral Yinlingquan (SP9) acupoints; and Ququan (LR8) groups receiving 2 Hz EA, applied at bilateral Ququan (LR8) acupoints. The mean blood flow/perfusion of the spleen and liver was recorded using a laser Doppler blood flow monitor prior to EA (representing the baseline), during EA, and post-EA. Each measurement period lasted ten minutes. Nitric oxide levels were also measured from the right femoral arterial blood, following the conclusion of each series of blood flow/perfusion recordings. The results indicate that the sham EA did not increase the mean blood flow/perfusion in the liver or spleen; 2 Hz EA at bilateral Yinlingquan (SP9) acupoints increased the mean blood flow/perfusion in the spleen, but not in the liver. In contrast, 2 Hz EA at bilateral Ququan (LR8) acupoints increased the mean blood flow/perfusion in the liver, but not in the spleen. Nitric oxide levels showed no significant difference between any of the groups

at any stage of the measurements. According to the results, we conclude that EA at the Yinlingquan (SP9) and Ququan (LR8) acupoints

can increase the blood flow in the spleen and liver, respectively.

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## **Afferent Neural Branching at Human Acupuncture Points: Do Needles Stimulate or Inhibit?**

<http://online.liebertpub.com/doi/abs/10.1089/acu.2011.0823>

Morry Silberstein. Medical Acupuncture. March 2012, 24(1): 38-42.

**Background:** Acupuncture has previously been considered to be stimulatory to the nervous system; however, the specific mechanism for this remains unknown, with the few published studies of acupuncture-point histology showing reduced numbers of nerves and neural receptors at acupuncture-point sites.

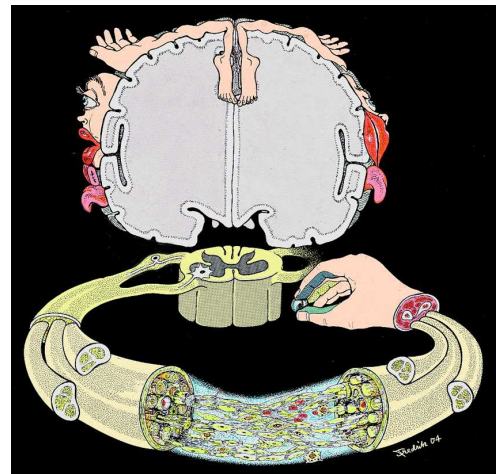
**Objective:** This study was undertaken to visualize the neuroanatomic features of acupuncture points in humans.

**Materials and Methods:** Light microscopy was performed on silver-stained sections of a human cadaver at P 6, and confocal microscopy was performed on PgP9.5 and P2X<sub>3</sub> immunostained sections of 2 points (GB 20 and SP 6) from a live human volunteer.

**Results:** At each point, but not at control sites, a single nerve bundle extending to the dermal-epidermal junction was identified where it branched into two parts, with each branch running perpendicularly, parallel to the dermal-epidermal junction.

**Conclusions:** Acupuncture may incise afferent unmyelinated axonal branch points, disrupting both neural transmission to the spinal cord and crosstalk along meridians, while simultaneously stimulating larger, myelinated afferents, thus

explaining both the immediate and long-lasting effects of acupuncture.



# Acupuncture for symptom management in hemodialysis patients: a prospective, observational pilot study

<http://www.biomedcentral.com/1472-6882/12/S1/P232/>

K. Kim. *BMC Complementary and Alternative Medicine* 2012, *12(Suppl 1):P232*

Patients undergoing hemodialysis suffer from a variety of complications related to end-stage renal disease. This prospective, observational pilot study aims to determine the feasibility, safety, and possible benefits of acupuncture for symptom management in patients undergoing hemodialysis.

## Methods

Twenty-four patients undergoing hemodialysis received acupuncture treatment for their symptoms. Manually stimulated, individualized acupuncture treatments were provided twice a week for 6 consecutive weeks on a nondialysis day or on the day of hemodialysis prior to initiating treatment. Symptoms were evaluated using the Measure Your Medical Outcome Profiles 2 Questionnaire, and quality of life was measured by the Kidney Disease Quality of Life-Short Form (KDQOL-SF™) Version 1.3 at baseline, 7 weeks and 11 weeks from baseline. Statistical analysis was conducted on the basis of the intention-to-treat principle.

## Results

Twenty-one patients (87%) completed the whole treatment course and follow-up evaluation. Three patients dropped out due to increased

fatigue (n=1), pancreatic and renal transplantation (n=1), and infections of the arteriovenous fistula used for hemodialysis access (n=1). Patients experienced a significant improvement of symptoms considered the most bothersome, reporting a decrease of 1.87 and 2.08 points on a 0-6 symptom scale at 7 weeks and 11 weeks, respectively (both  $p < 0.0001$ ). Some subscales of KDQOL-SF™ showed significant improvement at 7 weeks (effects of kidney disease, burden of kidney disease, role-limitations physical, emotional well-being, and energy/fatigue) and 11 weeks (physical functioning and energy/fatigue). No serious adverse events related to acupuncture occurred.

## Conclusion

Acupuncture seems feasible and safe for symptom management in patients undergoing hemodialysis. Future controlled trials are needed to confirm the benefits of acupuncture.

# How Well Do Randomized Trials Inform Decision Making: Systematic Review Using Comparative Effectiveness Research Measures on Acupuncture for Back Pain

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0032399>

Claudia M. Witt,(2012) . PLoS ONE 7(2): e32399. doi:10.1371/journal.pone.0032399

## Background

For Comparative Effectiveness Research (CER) there is a need to develop scales for appraisal of available clinical research. Aims were to 1) test the feasibility of applying the pragmatic-explanatory continuum indicator summary tool and the six CER defining characteristics of the Institute of Medicine to RCTs of acupuncture for treatment of low back pain, and 2) evaluate the extent to which the evidence from these RCTs is relevant to clinical and health policy decision making.

## Methods

We searched Medline, the AcuTrials™ Database to February 2011 and reference lists and included full-report randomized trials in English that compared needle acupuncture with a conventional treatment in adults with non-specific acute and/or chronic low back pain and restricted to those with  $\geq 30$  patients in the acupuncture group. Papers were evaluated by 5 raters.

## Principal Findings

From 119 abstracts, 44 full-text publications were screened and 10 trials (4,901 patients) were evaluated. Due to missing information and initial difficulties in operationalizing the scoring items,

the first scoring revealed inter-rater and inter-item variance (intraclass correlations 0.02–0.60), which improved after consensus discussions to 0.20–1.00. The 10 trials were found to cover the efficacy-effectiveness continuum; those with more flexible acupuncture and no placebo control scored closer to effectiveness.

## Conclusion

Both instruments proved useful, but need further development. In addition, CONSORT guidelines for reporting pragmatic trials should be expanded. Most studies in this review already reflect the movement towards CER and similar approaches can be taken to evaluate comparative effectiveness relevance of RCTs for other treatments.

# A new method for quantifying the needling component of acupuncture treatments

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3373635/>

R Davis. BMC Complement Altern Med. 2012; 12(Suppl 1): P142.

## **Purpose**

The highly variable nature of acupuncture needling creates challenges to systematic research. The goal of this study was to test the feasibility of quantifying acupuncture needle manipulation using motion and force measurements. We hypothesized that distinct needling styles and techniques would produce different needle motion and force patterns that could be quantified and differentiated from each other.

## **Methods**

A new needling sensor tool (Acusensor) was used to record needling in real time as performed by six New England School of Acupuncture (NESA) faculty from the “Chinese Acupuncture” (Style 1) and “Japanese Acupuncture” (Style 2) programs (three from each). Each faculty expert needled twelve points (six bilateral locations) in twelve healthy human subjects using both tonification (Technique 1) and dispersal (Technique 2). Parameters calculated from the raw needling data were displacement amplitude, displacement frequency,

rotation amplitude, rotation frequency, force amplitude, and torque amplitude.

## **Results**

Data analysis revealed significant differences in the amplitude of both displacement and rotation between needling performed by faculty from two different acupuncture styles. We also found significant overall differences in the frequency of displacement between tonification and dispersal that were not dependent of the style of

acupuncture being performed. The relationships between displacement and rotation frequencies, as well as between displacement and force amplitudes, showed considerable variability across individual acupuncturists and subjects.

## **Conclusion**

Needling motion and force parameters can be quantified in a treatment-like setting. Needling data can subsequently be analyzed, providing an objective method for characterizing needling in acupuncture basic and clinical research.



## Acupuncture for Irritable Bowel Syndrome: Systematic Review and Meta-Analysis

<http://www.nature.com/ajg/journal/v107/n6/abs/ajg201266a.html>

Eric Manheimer. *Am J Gastroenterol* 2012; 107:835–847; April 2012

Evidence-based treatment guidelines have been unable to provide evidence-based guidance on the effects of acupuncture for irritable bowel syndrome (IBS) because the only previous systematic review included only small, heterogeneous, and methodologically unsound trials. We conducted a new systematic review and meta-analysis of randomized controlled trials (RCTs) to estimate the effects of acupuncture for treating IBS.

### METHODS:

MEDLINE, the Cochrane Central Register of Controlled Trials, EMBASE, Cumulative Index to Nursing and Allied Health, and the Chinese databases Sino-Med, CNKI, and VIP were searched through November 2011. Eligible RCTs compared acupuncture with sham acupuncture, other active treatments, or no (specific) treatment, and evaluated acupuncture as an adjuvant to another treatment. Our outcomes were overall IBS symptom severity and health-related quality of life. Dichotomous data were pooled to provide a relative risk (RR) of substantial improvement after treatment, and continuous data were pooled to provide a standardized mean difference (SMD) in post-treatment scores between groups.

### RESULTS:

A total of 17 RCTs ( $N=1,806$ ) were included. We found no evidence of an improvement with acupuncture relative to sham acupuncture on symptom severity (SMD=-0.11, 95% confidence interval (95% CI): -0.35 to 0.13; 4

RCTs) or quality of life (SMD=-0.03, 95% CI: -0.27 to 0.22; 3 RCTs). Because of the homogeneity of the results of the sham-controlled trials, results were unaffected by restriction to the four sham-controlled RCTs that used adequate randomization, blinding, and had few withdrawals/dropouts. Among RCTs that did not use a placebo control, acupuncture was more effective than pharmacological therapy (RR of symptom improvement=1.28, 95% CI: 1.12 to 1.45; 5 RCTs) and no (specific) treatment (RR = 2.11, 95% CI: 1.18 to 3.79; 2 RCTs). There was no difference between acupuncture and *Bifidobacterium* (RR=1.07, 95% CI: 0.90 to 1.27; 2 RCTs) or between acupuncture and psychotherapy (RR=1.05, 95% CI: 0.87 to 1.26; 1 RCT). Acupuncture as an adjuvant to another Chinese medicine treatment was statistically significantly better than the other treatment alone, in trials with a high risk of bias (RR=1.17, 95% CI: 1.02 to 1.33; 4 RCTs).

### CONCLUSIONS:

Sham-controlled RCTs have found no benefits of acupuncture relative to a credible sham acupuncture control on IBS symptom severity or IBS-related quality of life. In comparative effectiveness Chinese trials, patients reported greater benefits from acupuncture than from pharmacological therapies. Future trials may help clarify whether or not these reportedly greater benefits of acupuncture relative to pharmacological therapies are due entirely to patients' preferences for acupuncture or patients' greater expectations of improvement on acupuncture relative to drugs.