



## Service Priorities and Programmes Electronic Presentations

**Convention ID:** 597

**Submitting author:** Ms Vera Yuk Lui CHAN

**Post title:** Physiotherapist I, Queen Elizabeth Hospital

### **The Immediate Effects of Electroacupuncture on Treadmill Exercise Running Time in Young and Healthy Sedentary Adults – A Controlled, Cross-over Study**

*Chan YLV(1), Li CTR(2), Yung SHP(2)*

*(1) Physiotherapy Department, Queen Elizabeth Hospital, (2) Department of Orthopaedics and Traumatology, The Chinese University of Hong Kong*

#### **Keywords:**

Electroacupuncture

Running time

#### **Introduction**

Most studies focused on the effect of acupuncture on the sports performance against a progressive resistance and yielded promising results. However, limited studies worked on the immediate effects of acupuncture on sports performed under constant and low resistance, such as marathon running, jogging etc. Thus, a cross-over study was designed to investigate the immediate effects of electroacupuncture (EA) on enhancing leveled treadmill running time in healthy, sedentary subjects at constant speed.

#### **Objectives**

To explore the immediate effects of EA on running tolerance, heart rate (HR), blood pressure (BP) and rate of perceived exertion (RPE) in healthy sedentary adults.

#### **Methodology**

Eighteen subjects recruited and received 3 interventions (A, B, C). In A, no EA was applied (control). In B, genuine EA was applied on subjects' bilateral Neiguan (P6) and Jianshi (P5) acupoints using low current (1–3 mA) and low frequency (2 Hz) for 30 minutes; and in C, sham EA was applied on two points 3 cm medial to P5 & P6 using the same current and frequency. The order of interventions was randomized and they were conducted separately in 3 different visits with a wash out period of 7 to 14 days. After the interventions, subjects underwent treadmill testing at a constant speed of 8 km/h. The test was stopped at subjects' volitional exhaustion or when subjects reached 85% of their maximum heart rate. Outcome measures included running time, RPE, HR and BP reached, and the change of HR.

#### **Result**

Running time was significantly longer after receiving genuine EA intervention ( $9.05 \pm 12.77$  minutes) as compared with control ( $5.41 \pm 7.10$  minutes) ( $p=0.001$ ) and sham EA intervention ( $6.12 \pm 7.75$  minutes) ( $p=0.004$ ). RPE was significantly lower in the genuine EA intervention group when compared with control ( $p=0.007$ ). There was an overall significant group difference in the average change of HR among the 3

interventions but not in the post-hoc tests even the rate of increase in HR was the lowest in the genuine EA intervention.

To conclude, EA on bilateral P5 and P6 might improve running tolerance on a leveled treadmill under constant speed with less perceived exertion. Acupuncture could be a possible alternative to prolong the training time and enhance the training effect for athletes.