

Change of Conductivity of Lao Gong Point after Tai Chi Exercise

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Abstract - The definitions of changes in the values of conductivity of Lao Gong points was carried out before and after the "8 Steps" Tai Chi exercises, the style of Yan.

Changes of the conductivity in Lao Gong points show that the balance of the human body can be adjusted by performing of complex exercises.

Index Terms - Tai Chi, Lao Gong Point; Conductivity, Change

1. Introduction

It is known that Tai Chi Chuan as a system of physical and mental perfection is one of the therapeutic methods of disease prevention and health restoration [1]. Tai Chi can reduce the symptoms of rheumatoid arthritis [2]. A recently published study found that Tai Chi can help rejuvenate patients with Parkinson's disease [3]. Analysis of the impact of Tai Chi exercises on patients with heart failure, carried out in [4]. It is shown that many-component psycho-physical exercises are safe and one can provide a significant improvement of quality of life and mood in frail patients with chronic systolic heart failure [5].

Registration of the change of the properties of acupuncture points before and after the of Tai Chi exercise may be one way to monitor the effect of exercise, despite the fact that the basic principles of measuring of the properties of acupuncture points and meridians are not well understood [6].

According to [7], conductivity of pericardium points has particularly dependent on the age of the patient. Unlike some other points, the conductivity does not change by more than 0.5% of the average for the interval of the patient's age from 15 to 55 years, whereas in most dots the conductivity decreases in the that range of ages. The authors conclude that the measured conductivity at acupuncture points is determined by blood flow and the water balance of the body primarily.

Purpose of work is definition of changes in the values of conductivity of Lao Gong points.

2. Materials and Methods

The definitions of changes in the values of conductivity of Lao Gong points before and after the Tai Chi exercises

was carry out. The complex of exercises was "8 Steps", the style of Yan.

During of the experiment, a first electrode was fixed on the little finger of the hand. Napkin is located between the electrodes (copper wire coiled around a finger) and the skin surface. Napkin is folded into two layers and wetted in a solution of NaCl salt at a concentration of 20 mm.

Operator was pressing the electrode to the point of Lao Gong of participant. The measurements were performed using a digital millimeter LCR-963. That was carried out for 5-7 series, in the each series were carried out of 5-10 of the measurements. In the experiment was participated a woman and three men (indicated in the table as 1, 2, 3, 4). Experiments were carried out in the interval between 15 and 17 hours after noon.

3. Results and Discussion

The results are expressed in units of conductivity (microsiemens) and one are presented in Table 1. The main structural components of the human body is water, proteins, salts and fat composition which are in a certain ratio to each other.

Thus, the change in conductivity of the acupuncture points shows that there is a corresponding change in the ratio between the structural components of the body. This ratio again return to equilibrium in a process of self-regulation.

This recovery process is essential for the rehabilitation of organs of digestion, respiration, excretion, reproduction and endocrine organs.

As can be seen from the data presented in Table 1, the conductivity at points of Lao Gong has an obvious increase after of fulfillment of the "8 Steps" Tai Chi complex exercises for all four participants.

Averaged values for all participants is showed the increase on 54% for the left hand and 17% for the right hand after exercises.

It is known that the performance of Tai Chi gymnastics does not have strong physical stress, but forms the skills of special breathing techniques and concentration. Changes in conductivity at Lao Gong points are showed that the balance of the human body can be adjusted for health purposes by performing compound exercises.

TABLE I The conductivity of the Lao Gong points for the left and right hands (LH and RH).

Participants	Before exercise		After exercise		The difference	
	LH [μ S]	RH [μ S]	LH [μ S]	RH [μ S]	LH [μ S]	RH [μ S]
1	0,086 \pm 0,009	0,095 \pm 0,009	0,135 \pm 0,010	0,104 \pm 0,008	0,048	0,009
2	0,056 \pm 0,004	0,068 \pm 0,017	0,084 \pm 0,011	0,079 \pm 0,011	0,028	0,01
3	0,125 \pm 0,034	0,147 \pm 0,021	0,189 \pm 0,016	0,206 \pm 0,010	0,064	0,059
4	0.115 \pm 0,031	0.113 \pm 0,025	0.180 \pm 0,013	0.117 \pm 0,011	0,065	0.004

4. Comments and Suggestions

Tai Chi movement soothing, and not so much intensity. But can be effectively improve the body's ability to self-regulate, is a very healthful exercise. Suggest addition to exercise "8 Steps" Tai Chi,

Exercises Tai Chi requires long-term insistence, and each exercise needed to reach certain time, be able to get relatively well results, can also be increasing exercises other styles and steps Tai Chi, to be increase interesting on the exercises.

Recommend exercises Tai Chi accompanied by soothing music, and reasonable breathing techniques, order to achieve the state of feel calm. Doing so, better to the result of exercises.

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