



## Exercise Biochemistry Review

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### Clinical rehabilitation of external humeral epicondylitis by ginger moxibustion and its combination therapy

Xiao Zhang, Pengyi Zhang  
Shandong Sport University

**Objective** External humeral epicondylitis, also known as “tennis elbow”, is a chronic motor inflammation caused by non-normative movement or excessive pressure and torsion of the forearm tendon and bone. The external humeral epicondylitis occurs mostly in tennis, badminton, table tennis, fencing, throwing, gymnastics and other sport programs. Because it has the highest incidence in tennis, everyone is used to call it “tennis elbow”. Those who have repeatedly used force to do elbow activities in daily life, such as housewives, bricklayers, woodworkers, etc., are also susceptible to this disease. Therefore, the disease affects a large number of occupations and sports. The conventional medical surgery leads to a large wound area and a long recovery time, which is easy to shorten the sportlife of the patient. The conservative Chinese medicine ginger moxibustion therapy could clear the meridians and organs by stimulating the acupoint of the human body. This moxibustion therapy has the advantages of small trauma, low cost, comprehensive treatment and small side effects by adjusting the blood, and would not bring inconvenience to patients' daily life and normal exercises. This paper aims to use a conservative treatment-Traditional Chinese medicine ginger moxibustion and its composite therapy to rehabilitate the external humeral epicondylitis systematically and compare the rehabilitation effects of different compound therapy to provide a basis for tennis elbow's rehabilitation.

**Methods** Eighty-four tennis elbow patients were divided into three treatment groups and one control group randomly, subject and observer-double-blind, third-party evaluation. The treatment groups included a group of ginger moxibustion named A, a group of floating needle combined with ginger moxibustion named B, and a group of Yunnan Bai Yao aerosol combined with ginger moxibustion named C, the control group named D, 21 people/group. In the treatment group A, acupuncture points were taken from A'shi, Quchi and Hand Sanli, ginger moxibustion treatment, 5 moxibustion columns/time, once every other day, 5 times as a course of treatment, observe the effect after two courses; The group B was first treated with floating needles at three acupoints, and after 2 minutes treated as group A, 5 moxibustion columns each time, once every other day, 5 times as a course of treatment, observe the effect after two courses as well; The group C was first sprayed on Yunnan Bai Yao aerosol in three acupoints, two minutes later, treated as group A, use 5 moxibustion columns each time, once every other day, 5 times as a course of treatment, observe the effect after two courses. The control group was treated with ginger laser treatment at the same acupoints, keep as the same treatment as group A, observe the effect after two courses. The shoulder-arm-hand disability score (DASH) was used for the main observation index, and pain (VAS), painless grip strength (PFGS) and pressure pain threshold (PPT) were meanwhile used as secondary observation indicators.

**Results** Four sets of experimental data were submitted to Shandong University of Traditional Chinese Medicine. The analysis of results showed that patients in treatment groups improved their function and relieved the pain significantly much better than the ginger-fake laser control group within 3-12 months of treatment completion. In the treatment group, the total effective rate of the group A-- treated with ginger-free moxibustion was 80%, and the total effective rate of the group C -- treated with Yunnan Bai Yao aerosol combined with ginger moxibustion was 85%, and the total

effective rate of the group B--treatment with floating needle combined with ginger moxibustion was 92%, but the total effective rate of the control group was 10%.

**Conclusions** The clinical recovery evaluation and index assessment results showed that ginger moxibustion and its combination therapy had significant curative effects on patients suffering external humeral epicondylitis. The addition of auxiliary means also promoted the rehabilitation effects, further proving the Traditional Chinese medical effects. The method could significantly improve the rehabilitation of external humeral epicondylitis. The research made a bold exploration for the multi-organizational cooperation mode of TCM compound therapy in the field of sport injury habilitation, and opened a new way for its application of clinical research.