

# The Significance of Traditional Chinese Medical Exercise Yijinjing in the Health Care and Rehabilitation for the Elderly

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**Abstract.** With the improvement of living standards and the development of the Chinese medicine industry, the elderly has an increasingly strong demand for disease prevention and health care and rehabilitation. Based on the current research, it has been found that Chinese medical exercises such as Yijinjing can regulate qi and blood, relieve tendon and activate collaterals, strengthen physical fitness, prevent and treat diseases, and have obvious health and rehabilitation value. It has attracted the attention of many scholars. This paper will briefly explain the significance of massage techniques of Yijinjing in the health care and rehabilitation of the elderly.

**Keywords:** Chinese medical exercise, Yijinjing, the elderly, health care and rehabilitation.

## 1. Introduction

Now, aging has become a serious social problem. It is estimated that the proportion of the elderly population will reach 25.5% in 2050 and the number of elderly people aged 60 and above will reach 487 million by 2053. However, with the increase of age, the immune function and physiological function of the elderly will obviously decline, and serious diseases such as cardiovascular and cerebrovascular diseases, hypertension, skeletal muscle atrophy and arthritis are more likely to occur. The occurrence of diseases reduces the life happiness of the elderly to varying degrees, or even seriously hinders their daily life. The traditional Chinese medical exercise Yijinjing, has the effects of relaxing muscles and tendons, strengthening the body, and preventing and treating diseases, and shows a remarkable value in health preservation and rehabilitation. It can effectively improve the health status and quality of life of the elderly.

## 2. Overview of the Traditional Chinese Medical Exercise

### 2.1 The Origin of the Traditional Chinese Medical Exercise

Generally speaking, the origin of the traditional Chinese medical exercise can be attributed to the following aspects: the labor in life, ancient gladiatorial fights, ancient dances and the evolution of bionic dances.

First, it came from the labor in life. In the process of labor and rest, the prototype of static work and dynamic work is summarized through the intuitive feeling of the body.

Second, it originated from the ancient gladiatorial fights, in order to produce and live, hunting for food and grabbing territory, resulting in fights, which slowly evolved into the embryonic form of the traditional Chinese medical exercise.

Third, it originated from the ancient dances or imitated the form of birds, animals, fish and insects, or simply expressed emotions through body movements. Slowly, it became a simple dance, and then evolved into a traditional Chinese medical exercise.

Fourth, it originated from the evolution of bionic dances. Based on the original Neolithic dance, through repeated imitation of animal movements, the embryonic form of the traditional Chinese medical exercise was gradually summed up.

## 2.2 The Development of the Traditional Chinese Medical Exercise

In the pre-Qin period, guided exercise appeared in China. There is a sentence in *The Medical Classic of the Yellow Emperor*, that is “In ancient times, there was a real person, who grasped the heaven and earth, grasped yin and yang, breathed essence, kept the spirit independently, and had the same muscles.” There was also a record in *Zhuangzi*: “Blowing cold air and exhaling the turbid air in the body, breathing in warm air and inhaling fresh air, like a bear climbing a tree and hanging itself, like a bird flying in the air and stretching its feet, just to maintain health and longevity. This is the preference of those who guide and maintain health, such as Peng Zu, who lived a long life.” In these sentences, the description of the guide technique is carried out, and the embryonic form of the massage and regimen is also shown. During the Ming and Qing Dynasties, guided exercise, massage and Chinese medical exercise were further developed, and the traditional Chinese exercise became rational and legal. In modern times, due to the strong support of the state for the cause of traditional Chinese medicine and the improvement of people’s sense of health care, the traditional Chinese medical exercise has been developed unprecedentedly in this period.

## 3. Overview of the Traditional Chinese Medical Exercise Yijinjing

### 3.1 The Origin of the Traditional Chinese Medical Exercise Yijinjing

The connotation of the phrase *Yijinjing*, which includes three characters can be interpreted as follows: *Yi* means change, *Jin* means tendons and bones, and *Jing* means method. Generally speaking, Yijinjing, a traditional health-preserving method based on traditional Chinese medicine, can reach the whole body, dredge meridians and keep fit by practicing twelve kinds of exercises. In general, Yijinjing is a traditional health care method based on the theory of Chinese medicine. Through the practice of the twelve kinds of postures, qi can reach the whole body, dredge meridians and keep healthy. Yijinjing was founded in the Northern Wei Dynasty by Dharma in India. At present, the popular version is *The Twelve Postures of Yijinjing* proposed in *Essentials of Hygiene* written by Pan Wei. After that, the experts of the General Administration of Sport of China revised it based on the traditional medical exercise, and formed a new version of the well-known Twelve Postures of Yijinjing. It has been widely recognized by the public. As the saying goes, “practicing qi inside and exercising muscles and bones outside”, practicing Yijinjing can prolong the lifespan, prevent diseases and improve health, which is of significant guiding value to the health care for the elderly.

### 3.2 Characteristics of Yijinjing

#### 3.2.1 Stretching Tendons and Pulling Bones

The postures of Yijinjing are relatively extended, which can affect the spine and bones. By practicing Wei Tuo’s pestle posture, which is based on the exercise of four limbs, and bowing posture and tail dropping posture, which is based on rotating and flexing the spine, the extensibility of soft tissues and the flexibility of joints can be improved. These postures have a positive impact on the locomotor system of the elderly. At the same time, the back-shu acupoint can be stimulated by the movement of the spine, and then human viscera and qi can be adjusted smoothly, which can preserve health, prevent diseases, and recover health care.

#### 3.2.2 Coordination and Balance

Twelve postures are natural and smooth, with softness in rigidity. Practitioners are required to have strict control over both speed and strength. This can coordinate the mutual cooperation between the exerciser’s body and neuromuscular system, and help to improve the overall balance of the whole body.

### 3.2.3 Guiding qi by Movement

When practicing Yijinjing, it is also required to breathe smoothly and freely. One cannot hold back breath or stagnate, so that qi is naturally comfortable. The thought should be calm and clear, harmonious with spirits, have a peaceful mind, and thus keep all the five internal organs safe. In the process of exercise, people also need to use mental actions to guide the free movement of the heart and spirit, so as to exercise the respiratory system function of the elderly.

### 3.2.4 The Chinese Medical Mechanism of Yijinjing

The exercise purpose of massage Yijinjing is to pursue balance. The human body is an organism with a dynamic balance of yin and yang, and nature also pursues a balance of yin and yang. Yijinjing is based on the meridian of traditional Chinese medicine. By practicing massage techniques, Yijinjing can adjust the yin and yang of the human body, ensure the yin and yang balance between the internal environment of humans and the external environment of nature, and reduce the occurrence of diseases.

Qi is the most basic substance that constitutes the human body and promotes human life activities. As *The Nan Jing* proposed: “Qi is the root of human beings, and when the root is removed, the stems and leaves will wither away.” By practicing traditional Chinese medical exercises, the elderly can stimulate and fill the vitality of the human body, and activate the qi of human viscera and meridians.

Meridians are blood channels that enter the human body, and also contact the internal viscera and limbs of the human body to communicate the upper, lower, internal and external blood channels. When the meridians are blocked from each other, or the meridians are blocked by qi and blood, it can lead to stagnation of body fluid and finally become phlegm. At the same time, the stagnation of qi is not conducive to the normal distribution of body fluid, resulting in the deficiency of yin body fluid, which leads to various diseases. Therefore, the meridians are being opened, which promotes the smooth operation of qi and blood and the orderly distribution of body fluid. At the same time, the will is concentrated, the spirit is adjusted, so that the functions of human viscera are harmonious, and the purpose of “The place where the meridians pass through is the main thing to consider when treating; the area where the internal viscera belong to is the main thing to do when treating” is achieved. Besides, Yijinjing can also regulate breath, heart and mind. Yijing pays attention to the recuperation of essence, qi, blood and body fluid, which has a significant effect on the conditioning of human body functions. It has great health care value.

## 3.3 Modern Mechanism Analysis

### 3.3.1 Nervous System

YiJINjing can relieve the anxiety of the sympathetic nervous system, relieve negative emotions, and stimulate and maintain positive psychological vitality. When practicing Yijinjing, the sympathetic nervous system and vagus nervous system are stably transferred to the dominant state of the sympathetic nervous system. The excitability of the sympathetic nerve is obviously enhanced, which makes R-Rmean decrease, TF, CV, LF/HF, NLF increase and NHF decrease. After practice, the balance of the sympathetic nerve and vagus nerve turned to the dominant state of the vagus nerve, and the vagus nerve immediately resumed its strong regulating function. And the excitability of the sympathetic nerve was inhibited, so R-Rmean increased and recovered, TF, CV, LF/HF, NLF decreased, and NHF increased. RMSSD is stable at a high level in the whole process. It shows that after practicing Yijinjing, the regulating function of the autonomic nervous system of exercisers is obviously enhanced. Zhang Guodong et al (2017) used acupuncture therapy combined with the Yijinjing method to randomly select stroke patients for three months and the scores of SDS of stroke patients were also tested. And it was found that Yijinjing had a very positive and effective psychological promotion effect on the adjustment and recovery of the depression of hemiplegic patients and their return to normal life, which was helpful to completely change the negative depression and anxiety of hemiplegic patients after their rehabilitation. Shen Hejun et al (2013) observed and studied 526 middle-aged and elderly people who exercise regularly and exercise rarely

in Nanjing, and found that Yijinjing can improve the physical discomfort of the elderly and alleviate the symptoms of schizophrenia.

### 3.3.2 Cardiovascular System

Yijinjing can improve blood lipid and blood pressure, slow down the heart rate and improve heart function. Elderly patients susceptible to cardiovascular diseases can practice Yijinjing under the guidance of exercise prescription, which can relieve discomfort and pain. Professor Liu Xiaodan et al (2010) randomly divided 64 elderly people into the exercise group and the control group. Some elderly people in the exercise group are practicing Yijinjing. After nearly six months of follow-up, the research results showed that the LDL level of the elderly in the exercise group obviously reduced, the HDL level obviously increased, the GSH-Px value and serum SOD value obviously increased, the MDA level obviously reduced, and there was no obvious change in the control group. The results indicated that by practicing Yijinjing, the blood lipid of the elderly can be improved, and it has positive health-preserving significance in the prevention of cardiovascular diseases in the elderly.

### 3.3.3 Respiratory System

Yijinjing can improve respiratory muscle strength, improve lung ventilation function, and improve respiratory system function. Yijinjing is applied to the rehabilitation of COPD patients' lung function, which has a good lung rehabilitation effect. Zhou Kai (2014) observed and tested 25 elderly people who practiced Yijinjing reasonably for 6 months. By recording the peak inspiratory flow rate and the maximum expiratory flow rate of participants, it was found that practicing Yijinjing could improve the function of the respiratory system.

### 3.3.4 Locomotor System

Yijinjing focuses on muscle static training, improves muscle adaptability, reduces the occurrence of skeletal muscle reduction, and improves the overall activity, stability and muscle strength of muscle groups. Wang Bin et al (2016) observed 75 elderly people over 60 years old. The experimental group was given Yijinjing training three times a week, and after 12 weeks, the indexes such as back touching, vital capacity, and grip strength of left and right hands were evaluated. The results showed that the flexibility of the tester's body and the ability of human limbs in the experiment were significantly improved compared to the state when they began to practice. The results showed that Yijinjing was helpful to reduce the muscle fiber atrophy of patients with skeletal muscle reduction, and had a certain effect on skeletal muscle reduction. Zhang Jing et al (2010) adopted Fugl-Meyer FMA method to test the motor function of limbs of stroke patients in convalescence, and divided the patients into two groups, that is, the experimental group and the ordinary group. The exercise of Yijinjing was added to the rehabilitation training of the experimental group. The results showed that there were significant statistical differences in the scores of motor function of limbs between the two groups. As a result, practicing Yijinjing can help the rehabilitation of the human body's motor function.

### 3.3.5 Immune System

Yijinjing has a two-way regulating effect on the immune system. Feng Yixian et al (2013) randomly divided 156 elderly people with low and similar exercise situations into the Yijinjing group and a non-exercise group. After 168 days, they evaluated the immune system of the elderly and found that the activity of non-specific immune NK cells in the Yijinjing group increased, the level of specific immune response decreased, and the level of cytokine IL-2 in the immune system increased. The results showed that Yijinjing can improve the human body's immunity to a certain extent. Miao Fusheng (2014) observed 30 elderly people who practiced Yijinjing, and found that after practicing Yijinjing, the contents of IgG, complement C3 and C4 in the elderly increased. The results also indicated that practicing Yijinjing can improve human immunity.

## **4. The Consistency between the Advantages of the Traditional Chinese Medical Yijinjing and the Physical Condition of the Elderly**

### **4.1 Adaptability of the characteristics of Yijinjing Moves to the Needs of the Elderly**

According to the analysis of the characteristics of the massage techniques of Yijinjing, the massage techniques of Yijinjing are more suitable for the needs of health care and rehabilitation of the elderly. As people grow older, their physiological functions will gradually decline. The transportation and channel functions such as blood, excretion and nerve conduction are also gradually aging, and the functions of major systems such as respiration, motor, endocrine, excretion system and other central nervous systems are gradually blocked and declined, and their ability to bear the physiological and motor functions independently is also correspondingly reduced. At this stage, it is more suitable for low-intensity aerobic exercise. At present, most physical exercises improve the heart and lung function by improving the body, but in this process, it is often easy to cause physical damage, and its intensity and exercise mode are not suitable for the elderly.

However, Yijinjing is a kind of low-intensity aerobic exercise suitable for the elderly, which can help the elderly improve their physical condition, and has the value of health preservation and rehabilitation, because of its slow movement speed, gentle exertion, uncomplicated movements and no need for brute force.

### **4.2 The Relationship between the Superiority of the Massage Techniques of Yijinjing and the General Physique of the Elderly**

The physique of the elderly is mostly yang-deficiency. Massage techniques of Yijinjing show a very good effect on improving the frail physique of the elderly. For chills, soreness of the waist and knees and other symptoms, the effect is remarkable.

## **5. Summary**

### **5.1 Application Prospect**

Exercising Yijinjing can effectively solve the problems of the locomotor system and cardiovascular system of the elderly. It can meet the needs of the elderly for rehabilitation and health care to some extent. It is believed that with the further development of medicine, people will pay more attention to rehabilitation medicine, and the rehabilitation and health care of Yijinjing will be more detailed. It is hoped that the Yijinjing can be used more meticulously in the exercise prescription, and special exercises can be formulated for patients according to different people and diseases, so that Yijinjing can benefit society again.

### **5.2 Development limitations**

Tai Ji Chuan, Baduanjin and Wuqinxi are used and thoroughly studied by many people. On the contrary, Yijinjing is poorly mastered, and there are relatively few practitioners. It is even rarer for medical staff to suggest exercise prescriptions. If it fails to be used by human beings, it will be a loss. The medical value of Yijinjing still needs to be vigorously promoted, and the research on the mechanism of Yijinjing's massage techniques is relatively weak, especially the research on the decomposition movements, and the mechanism of some moves of Yijinjing is rather vague.

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