Review

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Traditional Chinese medicine (TCM) - A review (part 1)

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Abstract

Having been used for over 5,000 years in Asian countries, traditional Chinese medicine (TCM) has emerged as a highly sought-after alternative treatment option both during and after the COVID-19 pandemic. This article provides an overview of TCM, covering its history and roots in culture and philosophy, core concepts and theories, definitions of terms used in TCM, and examples of TCM being used in clinical settings. Both traditional Chinese and English versions of the titles of each TCM publication, along with the names of TCM theories, modalities, and key concepts, are provided.

This review is divided into two sections and has five components overall. Part 1 includes the following elements: the summary, the history of TCM, core concepts and theories of TCM, and definitions of acupuncture, moxibustion, and acupressure; part 2 includes the summary, definitions of the rest of TCM modalities and TCM clinical application examples. This is the part 1 of the review.

Keywords: Traditional Chinese medicine (TCM), acupuncture, acupressure, long-COVID, neurological disorders, qi.

History of TCM

Traditional Chinese Medicine (TCM) is rooted within Chinese culture, and it was founded at least five thousand years ago on the Central Plain of the Yellow River Basin in northern China. (1) The first medical literature on herbal medicine were discovered in Classic of Changes 易經 (Yi Jing) and Classic of Poetry 詩經 (Shi Jing). (1-4) Later, TCM evolved into a separate discipline as acquired knowledge was chronicled in medical publications. (2-4) The most well-known and fundamental four classics include the Inner Canon of the Yellow Emperor 黃帝內經 (Huang Di Nei Jing, ~26 BCE), Yellow Emperor's Canon of Eighty-One Difficult Issues 黃帝八十一難經 (Nan Jing, ~106 CE), Treatise on Cold Damage Disorders 傷寒論 (Shang Han Lun, ~206 CE), and Shennong's Materia Medica 神農本草經 (Shen Nong Ben Cao Jing, ~220 CE). (2-4)

Prior to the sixth century AD, Chinese Buddhist priests introduced Chinese medicine to Korea and Japan. During the Tang period (618–907), traveling priests further disseminated Chinese medical expertise to these regions. (3)

According to World Health Organization (WHO) statistics, TCM has been recognized by 29 nations and territories, including Australia, Canada, Austria, Singapore, and Vietnam, through legislation, with 18 countries and regions covering Traditional Chinese Herbal Medicine (TCHM) in medical insurance. Many TCHMs have been registered sequentially in the European Union (EU), Russia, Singapore, Cuba, and Vietnam. In contrast to the EU and other nations, TCHM must submit a new drug application (NDA) for marketing in the United States. This is in accordance with the FDA's Guid-

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ance for Industry Botanical Drug Products. In recent years, about ten TCHM products have submitted IND applications to the FDA. (5)

The "Way" 道 (Tao), the Balance Between Yin and Yang: TCM, as a synthesis of Chinese philosophy, culture, ritual, and medicinal practices, necessitates a comprehensive comprehension that extends beyond science. (1,2) Taoism, the central philosophy of TCM, believes that health is achieved through a delicate balance of Yin **陰** and Yang **陽**, known as the "Way" **道**. (1,6) Human health relies on both internal energy balance and harmony with the macrocosmic powers of Heaven **天** (Tien, the cosmos) and Earth **地** (Di, nature) (**Figure 1**). (1,7) The "Way" 道 (Tao) is the universal principles governing everything under Heaven **天下** (Tien-Hsia) and it applies equally to stars and planets, molecules and atoms, and operates in the human system in the same way that it does in the solar system. The human system is considered as a microcosmic mirror of the macrocosmic universe; an entire inner world made of the same elements and energies, and subject to the same natural laws, as the outward world and cosmos.

Qi 氣, the Vital Force: The fundamental concept of Traditional Chinese Medicine (TCM) is that all living things, including humans, possess a life force known as Qi, both theoretically and practically. (1,3,6) Qi **氣** is the energy that governs all apparent existence; it is invisible and immaterial, but it is the driving force behind all acts and the catalyst for all mental, emotional, and physical transformations. (1,3) External sources of therapeutic energy connect with internal organ energies that have natural affinities by using TCM modalities such as Chinese herbs, acupuncture, and Qi-Gong. The objective is to transfer and control energy to prevent illness or restore health. (1-3,8)

In terms of health, TCM prioritizes prevention, as exemplified by the old English proverb "A stitch in time saves nine." Disruption of this equilibrium can lead to various diseases or syndromes. To balance Yin and Yang and keep the body healthy, Qi **氣** must be balanced and flowing freely. When there is insufficient or excessive Qi in one of the body's energy pathways, known as meridians, or when the passage of Qi is obstructed, illness occurs. TCM heals disease by restoring and harmonizing disrupted internal energies and reestablishing energy equilibrium with the environment. (1,6,9)

Yin 陰 & Yang 陽: The principle of "Yin Yang" lies at the heart of TCM philosophy and is inextricably linked to the concepts of the Way **道** (Tao) and Qi **氣**. This pair of phrases has a wide range of metaphorical interpretations and is used to represent functional associations in Chinese language and culture. Common "Yin" **陰** examples include cold, female, earth, water, weak, dark, night, winter, passive, and interior whereas hot, male, heaven, fire, strong, light, day, summer, active, and exterior are examples of "Yang" **陽**. (1,7) The functional ideas of Yin and Yang, as illustrated in Table 1, are discussed under these terms in relation to medical context. (7)

Three Treasures 三寶 (San-Bao): The Three Treasures **三寶** (San Bao, **Figure 2**), or intertwined, interpenetrating facets of existence, are another way to view humans beings in TCM. These are Jing **精** (vital essence, physical body, including blood, hormones, enzymes, lymph, immunological elements, and other necessary biological components), Qi **氣** (total vital energy inside the human system, breath), and Shen **神** (pure primordial spirit, mind). (1,9)

Five Elements 五行(Wu-Xing): In TCM, the external sources and the interior organs share a common denominator: Five Elements (**五行** Wu-Xing**):** wood, fire, earth, metal, and water. This philosophy holds that everything in the cosmos, including the human body, is made up of five elements and it also depicts the stages of the continually changing cycle between Qi **氣** flow, the Yin **陰** and Yang **陽**. Sweet herbs, for example, restore spleen and stomach energy, as sweet is an Earth-energy flavor and the spleen and stomach are Earth-energy organs. Similarly, sour herbs and foods (Wood energy) improve liver and gallbladder function (Wood organs), while pungent (Metal) flavors affect the lungs and large intestine (Metal organs). (1-3,8)

Bian Zheng Lun Zhi 辨證論治: The method used in TCM practice has historically been Bian Zheng Lun Zhi **辨證論治**, or pattern identification approach. This pattern-based method, which is used to guide treatment for all illnesses, involves a thorough evaluation of clinical data gathered from the four fundamental TCM diagnosis procedures: observation, listening, questioning, and pulse analysis. (10,11)

Meridians 經脈 (Jing-Mai), the Pathway of Qi 氣: The internal organs are divided into two groups in TCM, and each group is usually linked in "Yin Yang" **陰陽** pairs per phase. Zang 臟, or solid or-

gans, which are considered Yin organs (heart and pericardium, liver, spleen, lung, and kidney), and Fu 腑 or hollow organs, which are regarded as Yang organs (small intestine and triple burner, gall bladder, stomach, large intestine, and bladder). (7,9) The Zang 臟 organs are related to the Yin meridians, whereas the Fu 腑 organs are related to the Yang meridians. A network known as 經脈 (Jing-Mai) or 经络 (Jing-Luo) is made up of connections between acupoints and meridians/conduits and collaterals of Qi 氣. There are twelve basic meridians, six Yin and six Yang, eight additional meridians, twelve collaterals, and their connective components. (9) The three Yang meridians of the hand, the three Yang meridians of the foot, the three Yin meridians of the hand, and the three Yin meridians of the foot are the four main groups of the twelve main meridians. Qi 氣 circulates cyclically through them, reaching every area of the body in the process. (1,7,9,12)

Definitions of TCM Modalities

Practice used in TCM include: (1,4,6,13)

- Acupuncture **針灸** and Moxibustion **艾灸**
- Acupressure **指壓**.
- Chinese herbal medicine **中草藥**. (in Part 2)
- Traditional Chinese dietary medicine. (in Part 2)
- Tui Na, Manual Therapy **推拿.** (in Part 2)
- Cupping **拔罐**. (in Part 2)
- Exercise, such as Tai Chi guan **太極拳** and Qigong **氣功** which combine movement with meditation. (in Part 2)
- Gua Sha **刮痧** (14,15) (in Part 2)

Acupuncture 針灸

Acupuncture is a modality that involves the insertion of very fine needles into the skin at acupuncture points which are located alone the meridians. (9) The theoretical basis of acupuncture follows the patterns of Qi **氣** that flow through the pathway (meridians) of the body, and any potential disruptions of this Qi **氣** flow are believed to be responsible for diseases. (1-3,8,9) Acupuncture works by effectively modulating the Qi **氣** flow and potential of the multiple internal organ energies that pass through the meridian network, increasing or lowering their strength based on the patient's needs. Recent study has revealed that meridians are more than just energetic routes, but actual physical structures that may be involved in tissue healing and repair. Acupuncture has been demonstrated to produce pain relief, anti-inflammatory, hormone-regulating, and immuno-stimulating benefits. (1-3,8) Via a complex neuro-endocrino-immunological network of actions, acupuncture and moxibustion reduce inflammation. These actions include antihistamine and downregulation of proinflammatory cytokines (TNF-α, IL-1β, IL-6, and IL-10), proinflammatory neuropeptides (SP, CGRP, and VIP), and neurotrophins (NGF and BDNF). In experiments where inflammation is produced, acupuncture has been shown to reduce the expression of COX-1, COX-2, and iNOS. (16) Furthermore, by blocking the JAK-STAT, NF-(B), and MAPK pathways, acupuncture and moxibustion reduce the release of cytokines. By modifying peripheral opioid release and reducing peripheral levels of prostaglandin E2 (PGE2) and cyclooxygenase-2 (COX-2), acupuncture acts on the hypothalamic-pituitary-adrenal (HPA) axis, generating analgesic and anti-inflammatory effects. (17)

According to national survey data, acupuncture is most commonly used in the United States for acute and chronic pain, osteoarthritis, headache and migraine, myofascial pain syndrome, sciatica, postoperative pain, cancer pain, chronic prostatitis/Chronic Pelvic Pain Syndrome, irritable bowel syndrome, fibromyalgia, seasonal allergies, urinary incontinence, treatment-related nausea and vomiting in cancer patients, asthma, depression, smoking cessation, infertility, carpal tunnel syndrome. (18)

Moxibustion 艾灸

Moxibustion uses a variety of delivery methods, including burning a stick or cones, as well as smokeless alternatives like stick-ons, sprays, and balms made from the leaves of Artemisia chinensis, sometimes known as mugwort. Acupuncture and moxibustion are commonly referred to as a single branch of therapy with the traditional term Jen- Jiou, 針灸, literally "needle and moxa." (1,9)

Blood pressure, heart rate, and cardiac rhythm can all be adjusted by acupuncture and moxibustion. It can be used to treat rheumatic heart conditions as well as cerebral vascular problems. (9) WHO also made known the initial set of forty-three acupuncture-moxibustion-treated disorders pertaining to the digestive, respiratory, and neuromuscular-skeletal systems, as well as stomatology and the five sense organs. Clinical experience demonstrates that acupuncture-moxibustion has a wide range of indications across all clinical domains, with encouraging clinical outcomes, especially when treating painful diseases like those affecting the neuromuscular system, the endocrine system dysfunctional diseases, diseases resulting from weakened immunity, and certain allergic conditions. (9)

Acupressure 指壓

Acupressure is referred as the needleless acupuncture because it uses fingertip instead of needles to modulate Qi 氣 via applying pressure on the acupoints. (19,20) Acupressure releases endorphins, relaxes muscles, and relieves pain in localized areas and across the body. (21-23) It is a safe, low-risk, and low-cost treatment that patients may learn to apply on their own using their fingers, hand-held acupressure devices, or adhesive vaccaria seeds to acupoints on their ears. (21,23)

It is commonly used, like acupuncture, to improve labor, manage labor pain, and shorten delivery time. (19,20) Acupressure is beneficial in treating a range of ailments, including mild trauma, dysmenorrhea, persistent headaches, low back, neck, labor, and chronic pain and other types of acute pain. (21,24,25) Auricular point acupressure, which targets acupoints along the outer ear, has been demonstrated to enhance functionality and relieve discomfort in individuals with chronic low back pain, cancer-related pain, weight reduction, smoking cessation, and other issues. (24)

A rising number of research have shown that acupressure can help relieve depressive symptoms. A meta-analysis found that acupressure reduced depression severity much more than sham acupressure and as an adjuvant to conventional treatment. (26) A meta-analysis found that acupressure can help reduce anxiety (0.847-1.459, $p < 0.001$). Finger massage improved the effectiveness of acupressure on inpatients and preoperative patients. Acupressure may be a useful therapy option for people suffering from anxiety and maintaining a stable hemodynamic condition. (27)

Acupressure can improve sleep, especially in older individuals and those with significant medical comorbidities. The Shenmen 神門 (‘spirit gate’, HT7) is the most employed in present therapy protocols. (28-30) Shenmen 神門 has two points. One is on the ear, and the other is around our wrist crease, both are associated with the heart meridian (**Figures 4 and 5**). Shenmen 神門 is regarded as "the primary acupoint to calm and regulate the spirit." (28-31) It can aid to nourish the blood while also cooling/calming down the internal heat. As a result, it is a very good point for the mind, emotions, and heart-related illnesses such as stress, anxiety, and insomnia, palpitation, memory loss/forgetfulness, car sickness, etc. (30,31) Other investigations identified 神門 HT7 acupuncture's regulatory functions on the GABA and serotonin systems in morphine addiction and depression animal models. (31-33)

Figure 1. Human health relies on both internal energy balance and harmony with the macrocosmic powers of Heaven 天 (Tien, the cosmos) and Earth 地 (Di, nature). (1)

Core Concepts and Theories of TCM

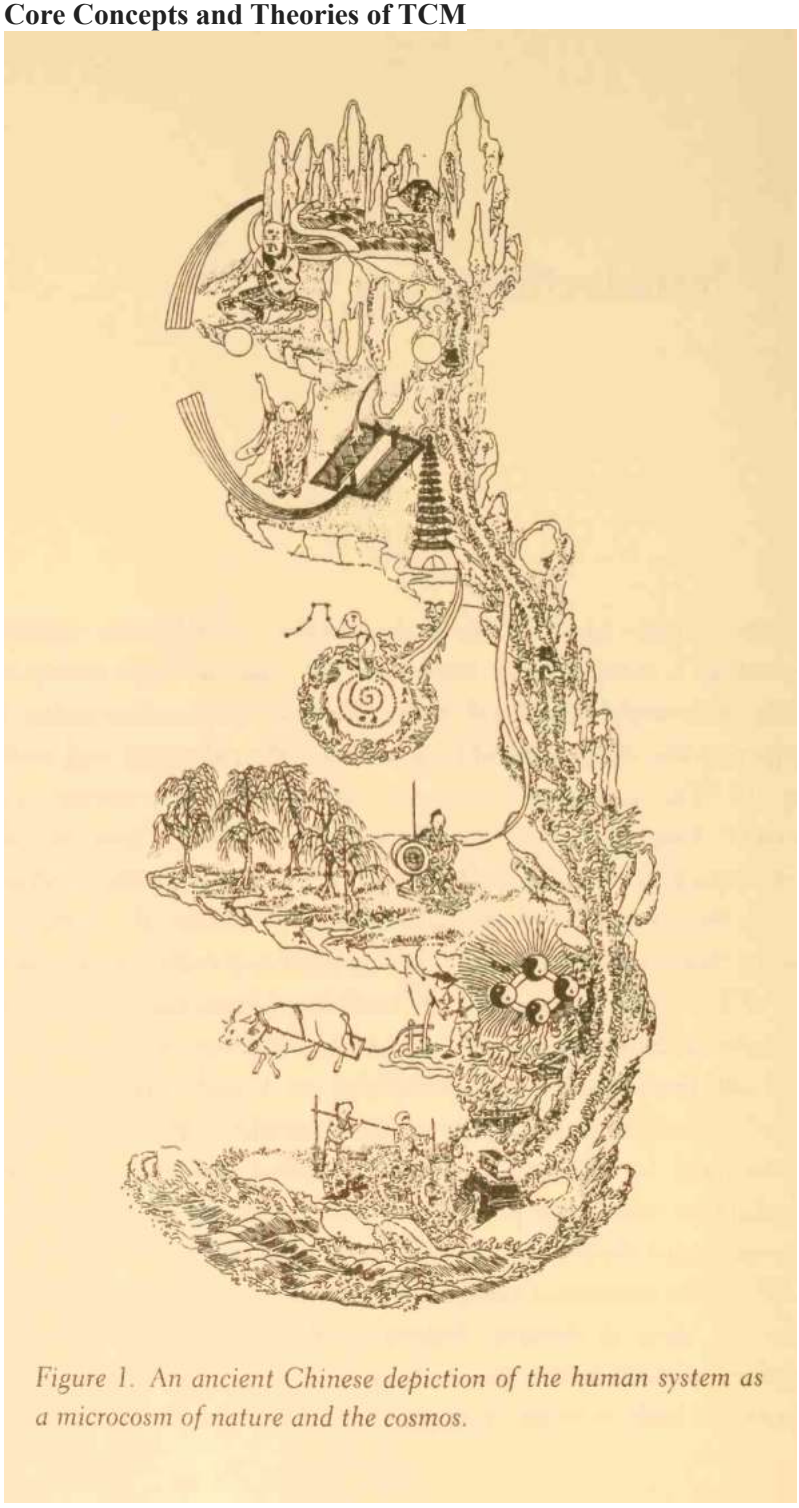


Figure 1. An ancient Chinese depiction of the human system as a microcosm of nature and the cosmos.

Table 1 (7)

“Yin”	**“Yang”**
Less vivid, less “qi” (depletion)	More vivid, more “qi” (repletion)
Colder, “algor”	Warmer, “calor”
Inside, interior, “intima”	Outside, exterior, “extima”
Structure	Function

Figure 2. Three Treasures 三寶 (San-Bao). (1)

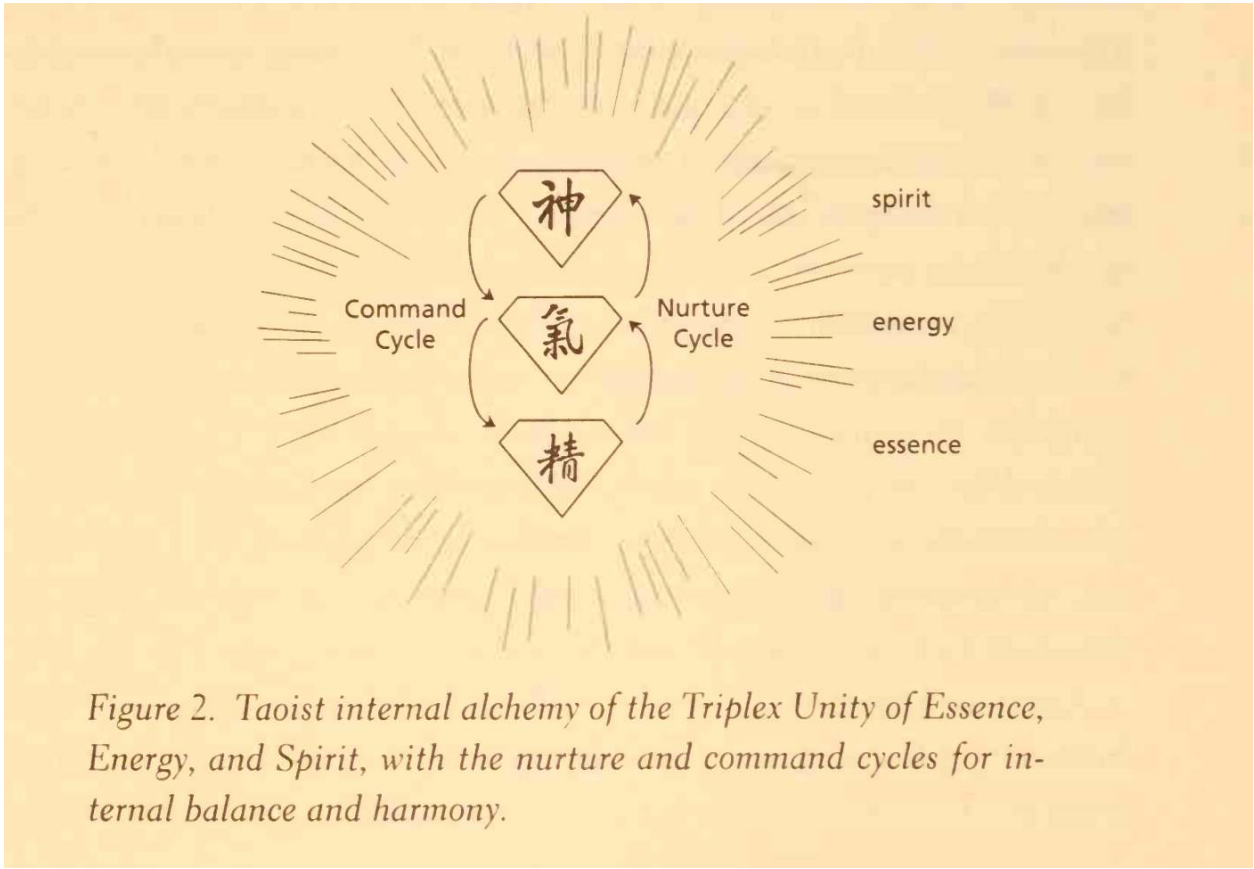


Figure 2. Taoist internal alchemy of the Triplex Unity of Essence, Energy, and Spirit, with the nurture and command cycles for internal balance and harmony.

Figure 3. Main characteristics of Five Elements 五行(Wu-Xing). (9)

Table 1a Some of the main characteristics of the five elements

Elements	Human Body				
	Five Zang	Five Fu	Five Sense Organs	Five Tissues	Five Emotions
Wood	Liver	Gall Bladder	Eyes	Tendon	Anger
Fire	Heart	Small Intestine	Tongue	Vessel	Joy
Earth	Spleen	Stomach	Mouth	Muscle	Anxiety
Metal	Lung	Large Intestine	Nose	Skin	Sorrow
Water	Kidney	Bladder	Ears	Bone	Terror

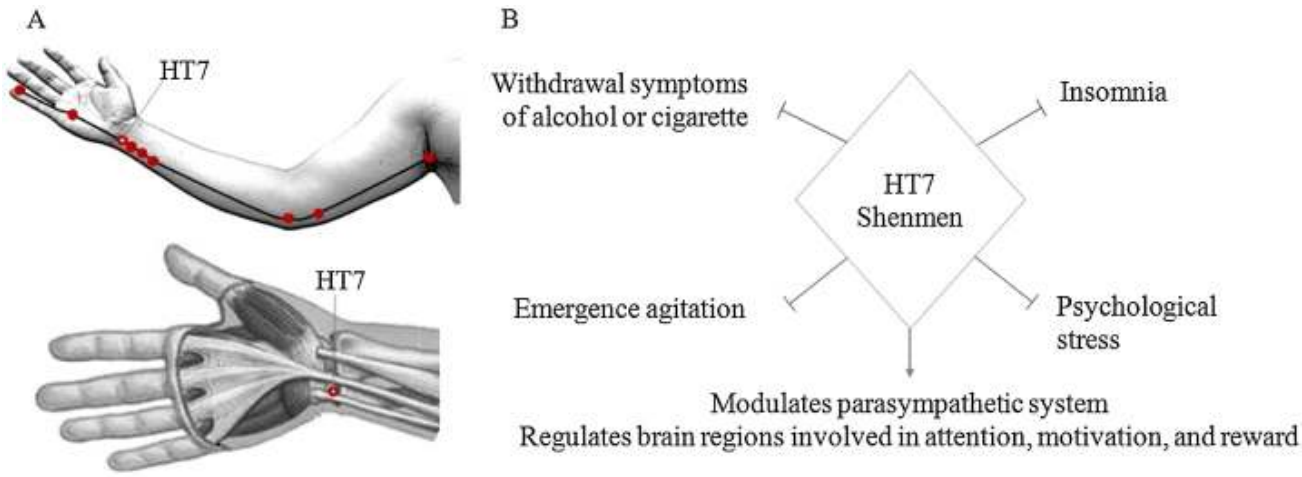
Table 1b Some of the main characteristics of the five elements

Elements	Nature				
	Five Directions	Five Seasons	Five Climates	Five Tastes	Five Stages of Development
Wood	East	Spring	Wind	Sours	Birth
Fire	South	Summer	Heat	Bitter	Growth
Earth	Centre	Late Summer	Dampness	Sweet	Transformation
Metal	West	Autumn	Dryness	Pungent	Harvest
Water	North	Winter	Cold	Salty	Storage

Figure 4. Location of HT7 on ear. Shen Men lies in the valley called the triangular fossa. To locate this point, follow the anti-helix upwards to where it splits into an upper and lower branch. At the center of where it splits Shen Men is slightly inward and upward. (29,34)



Figure 5. Location of HT7 (at the wrist joint on the radial side of the flexor carpi ulnaris in the depression at the proximal border of the pisiform bone) and its applications with clinical evidence. The heart meridian and location of HT7 acupoint (A), and summary for evidence-based clinical application of HT7 (B) are showed. (31)



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