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Review Article

East Asian Medicine: An Introduction

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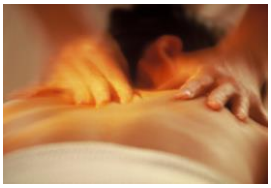
Evolution is a progression that continues to evolve through cycles of heating and cooling, moistening and drying, contraction and expansion. These processes enable bacteria and other microorganisms to grow. Nature evolves in harmony with these cycles and always seeks an equilibrium. In Asia, life is viewed originating from the relationship of the opposing forces of the skies and earth, heat and cold, dryness and wetness, daytime and nighttime, inhaling and exhaling, motion and rest, yin and yang. When we move beyond duality we experience the Tao – complete oneness. (1)

In studying nature, we can comprehend the mechanisms of human bodily functions. While Western medicine aims to reduce disease or functional mechanisms to isolated, single-most active functions or ingredients, East Asian medical theory thrives on correlate thinking: bodily and emotional functions closely interrelate to laws of the natural world. Viewing the human body as a microcosmic manifestation of the macrocosm around us, meteorological changes, diet, visual and auditory impressions, our ever-changing emotions and experiences, and our social environment all have significant influences on our body, mind and spirit. When we are in balance with all these influences and, most notably, within ourselves, we are healthy. We are constantly regenerating and degenerating, waxing and waning, hence, the Chinese developed a comprehensive system to help us achieve balance within this process. Acupuncture, Chinese herbal medicinals, acupressure, diet, Taiqi Chuan and Qi Gong (2 forms of gentle exercises and breathing), and gentle massage, known as Tui Na[1] all assist in achieving homeostasis or balance which translates to being healthy.



At about 2700 BCE, one of the first ancient texts, the *Huang Di Nei Jing – The Yellow Emperor's Inner Classic* discusses Chinese philosophy[2]. The *Nei Jing* includes thoughts on Taoism, religion, and observations pertaining to the functioning of nature and the universe, and their application to the functioning of the human body. Evolving descriptions of the relationships of *yin* and *yang* were recorded in the *Nei Jing*.

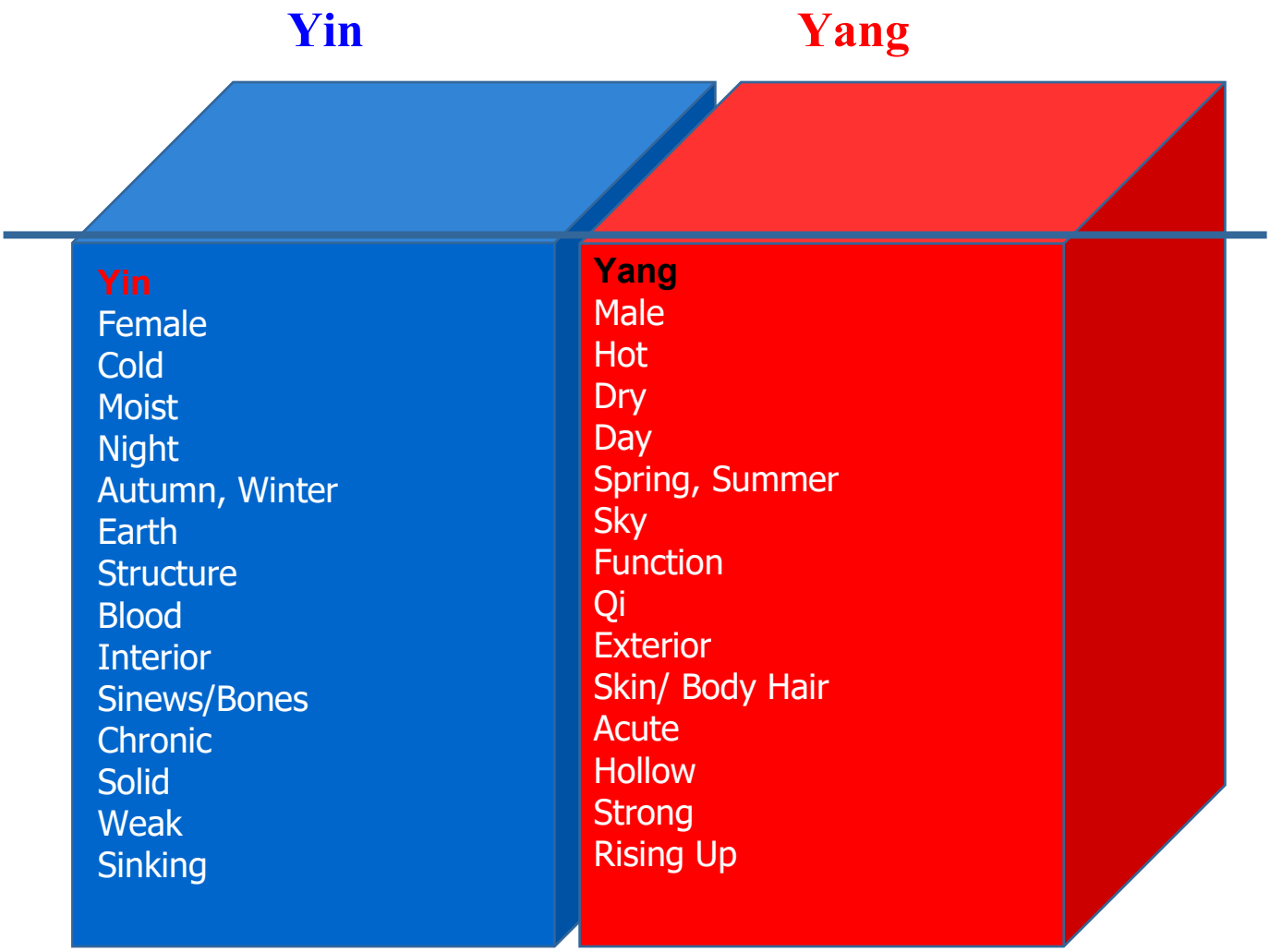
Yin/Yang Theory

The core of East Asian philosophy is represented by the well-known *yin/yang* symbol (Figure 1), which shows the natural process of continual change created by opposing forces. For every action there is an equal and opposite reaction.

Figure 1: Yin/Yang symbol

The small circles of opposing colors within the larger wave-like patterns illustrate that there is *yin* within *yang* and *yang* within *yin*. The dynamic curve that separates them shows that *yin* and *yang* are in constant motion and that they create, control, and transform each other. The whole world is seen in a dualistic interplay of opposites. The *yin/yang* correlates can be seen in Figure 2:

Figure 2: Yin/Yang associations



Chinese mythology goes back about 5,000 years and it is said that peasants experimented with certain exercises after a hard day's of work. They noticed energy vibrating through their bodies, moving up and down and into their extremities. These movements were precursors to Taoist meditation practices, *Taiji Quan* and *Qi Gong*. *Qi Gong* means '*qi* exercise'; some refer to it as 'longevity method' or 'breathing exercise'[3]. By refining these techniques, they noted an increase in vitality and mental clarity; these practices continued to evolve and the ancient masters began to observe a sense of well-being and relaxation while exercising. Emanating through their entire bodies they called this vibrating energy *qi*.

Qi is the vital energy that is behind all physiological processes. Other translations for *qi* are energy-matter, ether or life force. *Qi* is observable as steam yet has no distinct shape or form and "is difficult to comprehend as it can only be felt" according to Lao Zi who authored the *Tao De Jing*. Ted Kaptchuk states: "*Qi* could be viewed as matter just before it turns to energy, or energy where it begins to materialize."[4] *Qi* animates us and is life-giving. In a simplified way, it is generated from the air we breathe, and the food and liquids we consume. It warms us, protects us against pathogens, keeps the organs in their places, promotes growth and development, and directs all our movements.

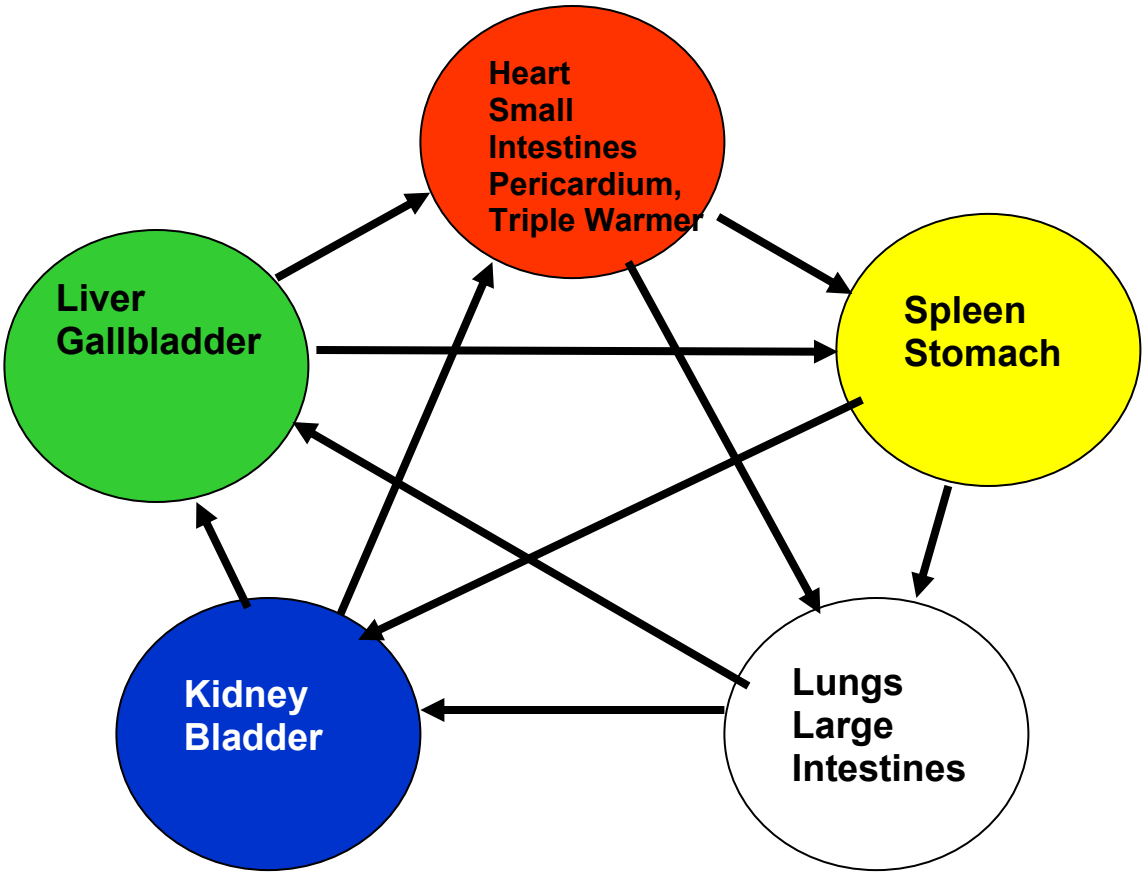
The ancient masters traced pathways through which *qi* passes and located points along them at which the *qi* communicates with the surface of the skin. These are the points that are used during acupuncture therapy. Via this meridian network system all organs are interconnected with each other. This meridian *qi* is accessed during acupuncture.[4]

Jing, or prenatal *qi* is the *qi* we receive from our parents. It makes up our constitution. If parents have led an unhealthy lifestyle prior to conception, they may produce a child with a weak constitution. *Jing* (or essence) governs the endocrine system, reproduction, and the central nervous system. *Jing* is also stored in the bone marrow. The Kidneys store *jing*, but also govern the bones, marrow, brain, the ears, and head hair, reproductive and sexual function, and aid in the processing of water via excretion of urine. Generally, Kidney energy and *jing* decline naturally as we age. That's why older people tend to have brittle bones, hearing loss, baldness, hair graying, memory loss, impotence, infertility and urinary problems. *Jing* is extremely valuable as it is very difficult to replace. By leading a healthy lifestyle, it can be preserved. People with weak constitutions may, therefore, age prematurely.[5]

Five-Phase Theory

Another important theoretical framework of East Asian medicine is the system of the five phases or elements. This is a complex system of correspondences and should not be viewed in absolute terms. Fire, Earth, Metal, Water and Wood are visualized in a five-star configuration. Each element corresponds to a *yin* and *yang* organ. *Yin* organs are solid whereas *yang* organs are hollow.[5]

Figure 3:



The Earth element, for example, includes the Spleen, a *yin* organ, and Stomach, a *yang* organ. Each organ has its own specific function, which greatly differs from their western, physiological function. Each of the twelve organs is associated with their own sense organ, tissue, season, direction, tastes, emotion, sound, color, spirit, and other correlations.

Table 1:

	Wood	Fire	Earth	Metal	Water
Yin	Liver	Heart, Pericardium	Spleen	Lungs	Kidneys
Yang	Gallbladder	Small Intestine, Triple Warmer	Stomach	Large Intest	Bladder
Tissue	Ligaments, sinews	Blood, vessels	Muscles	Skin	Bone, teeth, marrow
Odor	Rancid	Scorched/burnt	Fragrant	Rotten	Putrid
Orifice	Eyes	Tongue	Mouth	Nose	Ears
Sense	Vision	Speech	Taste	Smell	Hearing
Secretion	Tears	Sweat	Saliva	Mucous	Urine
Season	Spring	Summer	Late Summer	Autumn	Winter
Emotion	Anger	Joy	Worry, Overthinking	Grief, Sadness	Fear, Fright

Within the five-pointed star there are two types of interrelationships: the promotion cycle (*shen* cycle or mother/child cycle) starts with Fire as the mother of Earth. Earth, in turn, is the mother of Metal and so forth. The logic behind this principle is that fire generates ashes, which produce earth; from earth we collect metal; a metal container can hold water; water promotes new growth or wood and, finally, wood feeds fire.

The promotion cycle is relevant in diagnosing and treating patients. A chronic, weak cough may not be a Metal pathology but be one of deficient Earth, its mother. Therefore, treatment may be aimed at nourishing Earth rather than Metal alone. By supplementing the mother, the child benefits.

In the control cycle (*ko* cycle) Fire controls Metal, Metal governs Wood, Wood in turn acts on Earth, Earth controls Water, and, finally, Water controls Earth. This means that hot fire melts metal; a metal ax slices wood; a wooden tool loosens the earth; an earth dam holds water back; and lastly, water extinguishes fire. By treating someone's heat problem, (i.e. night sweating and insomnia) supplementing Water will modulate a heat problem and calm someone's restlessness. Via the Five Phase system the organs are energetically intertwined. Disease in one organ may affect another.

Aspects of spirit, consciousness and mind (*shen*) are primarily attributed to the Heart. *Shen* is correlated to cognitive thinking, rational reasoning, insight, ideas, memory, and speech, functions that are partially associated with the brain. A practitioner of East Asian medicine can diagnose strong or weak *shen* by looking into the patient's eyes. Bright and shiny eyes indicate a quick recovery, whereas dull and cloudy eyes may point to a serious illness. Patients that might have difficulty in making eye contact, feel emotionally flat or dull, might have a Fire imbalance.

The *Nei Jing's Su Wen* classical text discusses various spirits that are associated to each of the Five Phases. *Yi* is the spirit associated with the Earth element; it deals with thinking, intention, and sympathy. Imbalances of *Yi* could manifest in over-thinking, racing thoughts,

obsessive compulsion, overly empathetic behavior or lack thereof. The *Po*, or corporeal soul, is associated with Metal and deals with the breath and rhythm of life. Grief, regret, body memories of past trauma, self-worth, inspiration are attributes of *Po. Zhi*, the spirit of Water, encompasses birth, fertility, and maturation. *Zhi* can facilitate long-term grudges, jealousy and fear. And, finally, the *Hun* or ethereal soul, which enters the body at conception and leaves at death, travels during sleep to contact the higher self. It plans one's life and deals with intuition, introspection, meditation, and, when not nourished, the person daydreams, lacks direction in life, and can't make decisions.[2]

Treatments can redirect excess energy in one element to another where there is a deficiency, and they can supplement a deficiency or sedate an excess pattern. This causes health or balance on a physical, emotional and spiritual level.

Organ Disease

The concept of organ disease in East Asian medicine is completely different from modern medicine in that the organs have energetic functions that may or may not be related to their western physiological functions. For example: the Kidneys stores *jing* (essence), govern bones, teeth, marrow, and head hair, control the water metabolism, grasp the *qi* in the breathing process, and open into the ears. A Chinese physician, diagnosing weak Kidneys, doesn't imply the patient is a candidate for dialysis. He just diagnoses that the energetic quality of the Kidneys is weak, thereby adversely affecting the energetic function of the Kidneys.

A child suffering from chronic fear, an emotion associated with the Water element, might complain of enuresis. Attempting to cure his fear and bedwetting with comforting words or stern warnings will prove frustrating, perhaps even futile, if the source of the problem is deficient Kidneys *qi*.[7]

Within this context all organs have their distinct functions and certain energetic abnormalities may adversely affect other organs. There are six *yin* organs, which are Heart, Liver, Spleen, Lungs, Kidneys and Pericardium and six *yang* organs, which are Small Intestine, Gallbladder, Stomach, Large Intestine, Bladder and Triple Warmer, each with their respective meridian pathway. The Triple Warmer is a conceptual organ whereby the trunk region is horizontally divided into three parts each containing different organs. It belongs to the Fire element and its main functions are temperature regulation and providing water distribution into the tissues. Each *yin* and *yang* pair is dominated by one of the Five Elements (see Table 1).[6]

The etiological factors for potential disease patterns in the East Asian medical context are the Six External Pathogenic Influences and the Seven Emotions. The Six External Causes are Cold, Heat, Wind, Damp, Dryness, and Summerheat. Each of these influences can attack the human body, especially, when its defenses are lowered; they can also be translated into pathogenic attacks of the western concept of bacteria, viruses, and fungi, except an East

Asian medical practitioner is less concerned with isolating the actual microorganism but is more interested with how the pathogenic influences affect the patient individually.

Emotional instability lowers the immune or defense system thereby making a person prone to disease. The Seven Emotions are: joy, grief and sadness, fear and fright, anger, and worry. Any excess or absence of these emotions has a damaging effect upon its respective organ. Table 1 shows the Seven Emotions and External Pathogenic Influences within each element (5,6).

By translating emotions into organ disharmony one can see how, for example, a sad experience may provoke an upper respiratory infection. Temporarily, the sadness has decreased the Lungs' defense mechanism making the patient prone to an air-borne disease, or as Asians would say, evil *qi* or Wind has invaded the body via the pores, impeding with the Lungs' capability to descend and disperse. Instead of Lung *qi* descending it ascends, hence, the patient is coughing.

Other causes of disease are overeating or -drinking, consumption of spoiled foods, eating to many 'cold' or 'hot' foods, or over-indulgence in one of the five flavors associated with the Five Elements which can injure the associated organ. For example, excessive intake of sweets will damage Spleen and Stomach, or too much salt will affect the Kidneys unfavorably, leading, perhaps, to edema.

Just like western medicine, East Asian medicine has medical specialties. *Nei Ke* - internal medicine includes pediatrics, gynecology, ear/nose/throat, urology, ophthalmology, neurology, psychiatry, oncology, and geriatrics. *Wai Ke* - external medicine encompasses orthopedics, trauma medicine, and dermatology (8).

Diagnosis of disease occurs via the Four Inspections, which are inquiring, palpation, visual inspection, and listening and smelling through which an East Asian practitioner gathers all the relevant information. This involves asking questions about the patient's main complaint, medical history, constitutional issues as well as psychological factors since they all pertain to the complete presentation of any given patient. The East Asian medical practitioner visually inspects the tongue, hair, nails and skin color and palpates relevant areas of pain and the pulses on both wrists. Breathing sounds and certain odors are noted (4,5).

Both tongue and pulse are diagnostic microsystems that provide information regarding a patient's overall pathological state. A normal tongue is pink, has a normal size with a thin white coat. A pathological tongue can be either be pale or red, scarlet red, purple, cracked, thin and narrow in size or swollen, wet or dry, and may present with a coat ranging from thick white to yellow or black, or maybe have a sticky or slimy surface.

The pulse is usually felt on both sides of the radial artery though some systems of East Asian medicine also palpate the carotid pulse. Twenty-eight pulse qualities are differentiated. A normal pulse rate is between 60 – 80 bpm along with normal width and strength relative to

the patient's size[4]. The pulse changes rapidly and therefore can be used as verification system during treatment. After conclusion of the treatment a patient's pulses should be balanced which mirrors harmony within the organ system.

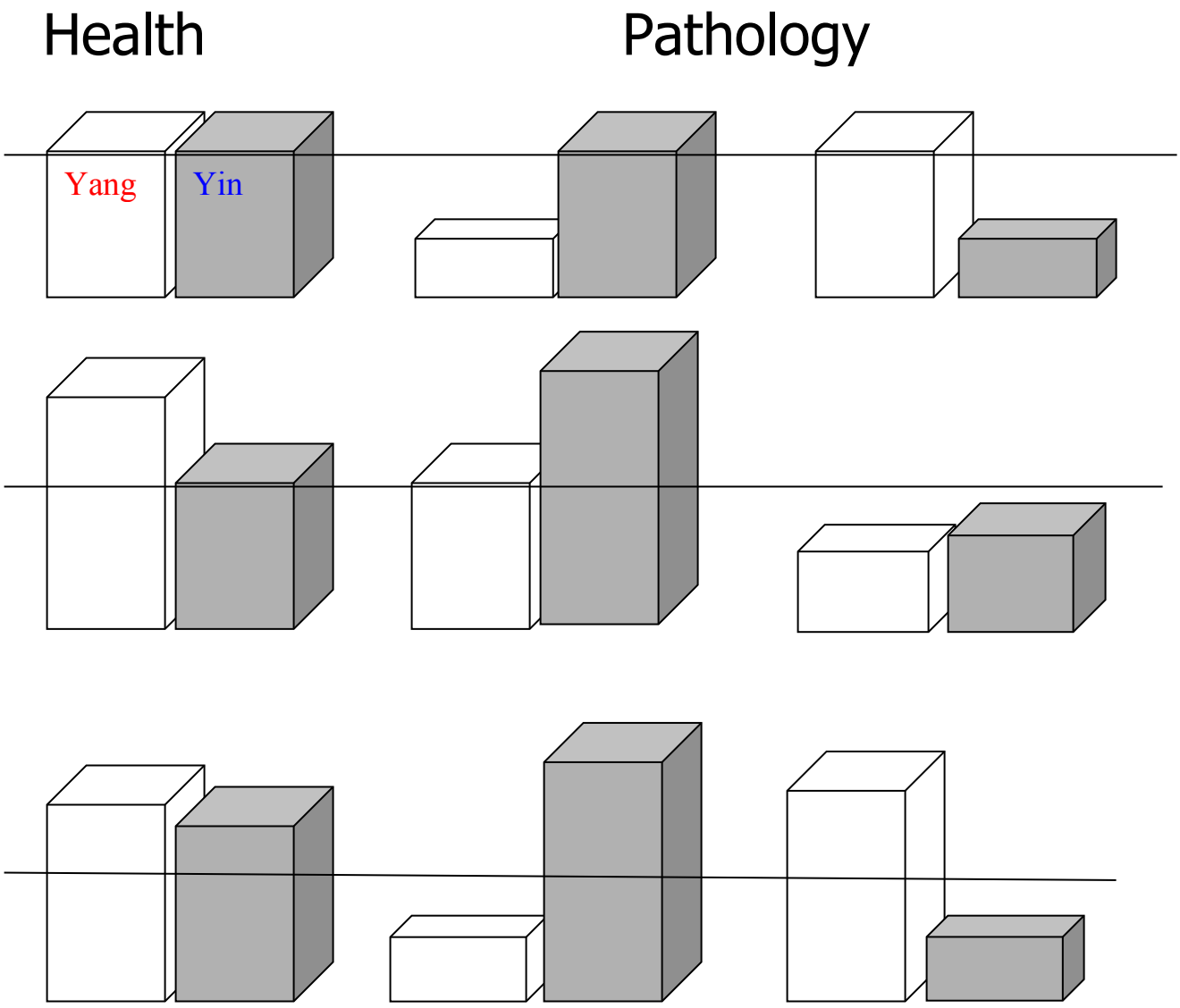
Patterns of Disharmony

Once patient examination has been completed the East Asian medical practitioner diagnoses a disease (i.e. asthma) and a pattern of disharmony (i.e. Lung *qi* deficiency with cold phlegm and underlying Kidney *yin* deficiency).

When *yin* and *yang* are in equilibrium, *qi* and *blood* (i) flow smoothly and sufficient amounts of *qi* and *blood* are present a person is considered healthy.

Eight *Yin/Yang* Pathologies can be distinguished from another:

Figure 4



When *yang* is deficient, the person appears more *yin*: he or she feels cold, lacks vitality, suffers perhaps from a lowered sex drive, wants to sleep all the time, and has a pale tongue with a frail pulse. However, if *yin*, which is a cooling and moistening agent, is deficient there seems to be an apparent excess of *yang*. A person tends to be driven, exhibits signs and symptoms of dryness, feels hot, can't rest calmly at night, and has a red tongue with a thin, rapid pulse.

In a case of *yang* excess a person may have contracted an external Wind Heat invasion and now exhibits a high fever. A patient with *yin* excess got wet in the rain and was unable to change his or her clothing for a period of time and now complains of acute edema.

A patient with osteoporosis can be viewed with both *yin* and *yang* deficient. *Yin*, the bone substance, is wasting away, and *yang*, the function of bone to carry the body, is also diminishing. If *yin* and *yang* are both excessive a patient may exhibit damp heat, which could manifest as acne or leukorrhea both of which exhibit signs of dampness (pus or discharge) and heat (redness or bad odor).

Lastly, if *yang* is deficient and *yin* excessive, a person might present with chilliness, obesity and phlegm nodulation as seen in polycystic ovarian syndrome. Likewise, if *yang* is excessive and *yin* is deficient, a patient may exhibit chronic hypertension, headache or have menses that are ahead of schedule along with heat symptoms such as red face, blood-shot eyes or burning sensations.

East Asian medicine stipulates that every disease initially manifests as energetic imbalance or premorbid condition before manifesting into pathology that is measurable with objective Western diagnostic methods. These energetic imbalances are distinguishable with the East Asian methods of examination. One could divide the staging of disease into six phases (Table 2):

Table 2:

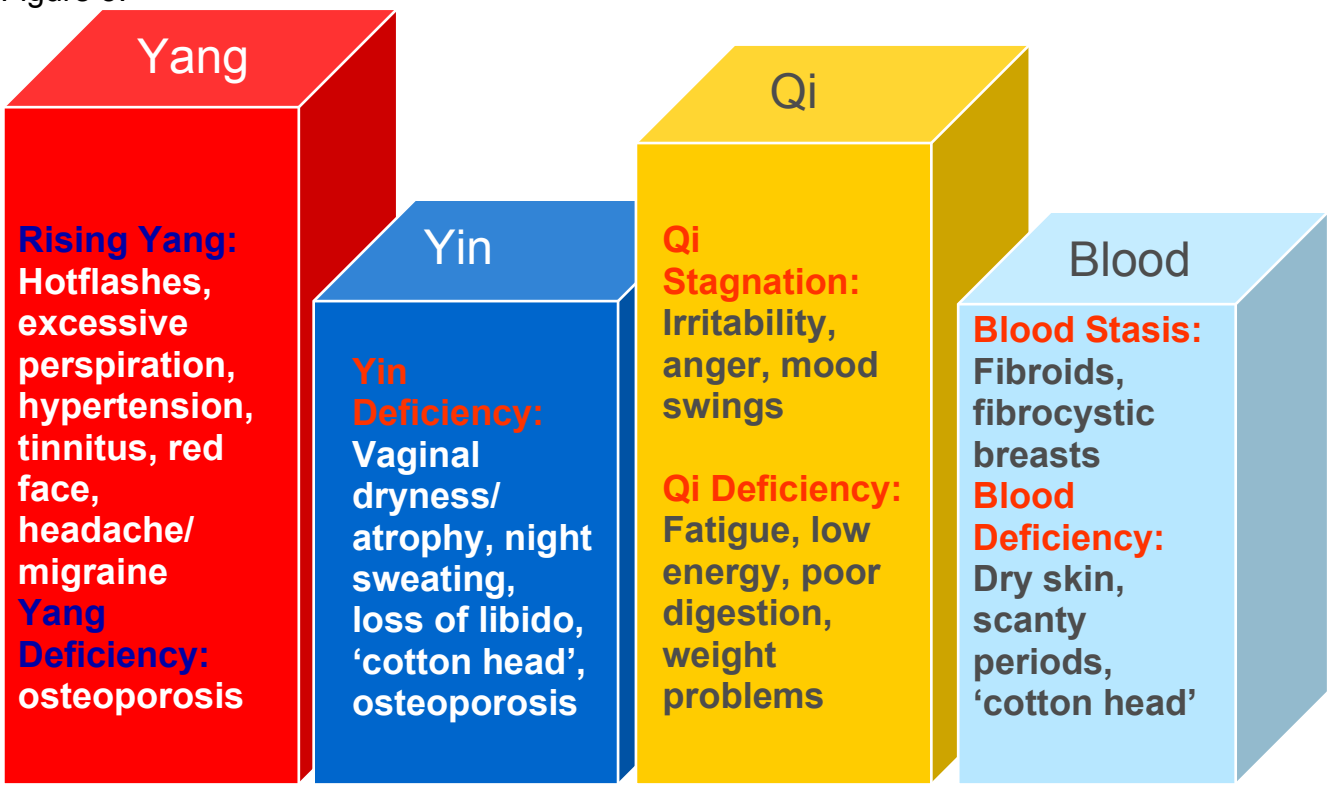
Premorbid conditions	Morbid conditions
1. Patient is healthy and in perfect balance, no OM patterns of disharmony	4. Patient is sick, obvious OM patterns, mildly abnormal diagnostic imaging and/or blood work. Allopathic intervention: drugs
2. Patient is healthy but occasionally has mild symptoms; visible but mild OM patterns of disharmony, no objective findings in Western medicine	5. Patient is sick, severe OM pattern pathology, abnormal lab work & diagnostic imaging. Allopathic intervention: drugs & surgery
3. Patient has more serious complaints; visible OM patterns, no objective findings in Western medicine	6. Patient is extremely sick or terminal, may need to be in the ICU

The patterns of disharmony and their respective treatments plans dictate how to address the patient's individual disease process. One or several treatment modalities can be chosen: acupuncture, acupressure, Chinese herbal therapy, moxibustion (the burning of an artemisia

leaf preparation on an area or point), cupping (the application of suction cups that draw out pathogenic influences), diet therapy, Tui Na (a type of massage), Qi Gong or Tai Qi (gentle movements and breathing exercises).

To elaborate on patterns of disharmony further please see the example of menopause using yin, yang, *qi* and *blood* to diagnose various manifestations of menopause. Figure 5 shows yang excess, yin deficiency, *qi* stagnation and *blood* deficiency, yang deficiency, yin excess, *qi* deficiency, and *blood* stasis. Yin, yang, *qi*, and *blood* may all be in a various disease, states hence the need for customization of diagnosis and treatment.

Figure 5:



Acupuncture

The term acupuncture is derived from Latin *acus,* a needle, and *punctura*, puncture (9). In East Asian medicine 'twelve main meridians' which correlate to the six *yin* and *yang* organs, i.e. Heart meridian, Spleen meridian etc., and 'eight extra meridians' are described. *Qi* flows from one meridian to another in a certain order until the entire network of meridians is covered, delivering vital energy to every part of the body. Adepts of Taoist breathing techniques are able to sense and direct the flow of *qi* along the meridian complex via Qi Gong exercises.[3] Practitioners of East Asianmedicine stimulate the flow of *qi* with acupuncture or acupressure along the meridian network, which influences the entire body.

The *Ling Shu - Vital Axis*, written around 762 AD mentions about 365 points that are commonly utilized. The body, however, has up to 2,000 acupuncture points altogether. Acupuncture and moxibustion reached the West during the 17th century by way of Japan. Moxibustion involves the burning of dried artemisia vulgaris leaves on the surface of the skin. These leaves were rolled into a cone, placed onto an acupuncture point and burned thereby effectively warming that region. Moxibustion is derived from the Japanese word *mogusa*, or herb for burning, and is commonly utilized in contemporary East Asian medical practice (10). Moxibustion is well known for its ability to turn a fetus in pregnant women diagnosed with breech presentations (11).

Each acupuncture point has one or several different functions. There are points to regulate digestion, points to calm the spirit, to promote labor during childbirth, to relieve pain in specific areas, to improve circulation cool Heat, and to supplement *qi*, *blood*, *yin* or *yang*.

Historically, needles were made of flint, thorns of various plants, bamboo slivers or bone. Today, East Asian medical practitioners use pre-sterilized disposable stainless-steel needles.

Acupuncture in the West

Acupuncture is practiced within East Asian medicine as a primary health care modality. Acupuncture and moxibustion reached the United States in the late sixties when during President Nixon's China trip acupuncture anesthesia was used successfully for the surgical removal of an appendix and the subsequent post-surgical pain management on one of his co-travelers. Since then, acupuncture has enjoyed continuous growth and patient satisfaction.

Around 300 000 practitioners practice acupuncture in one form or another in over 140 countries, of those, about 15 000, practice in the United States. Various styles of acupuncture are practiced throughout the world: Traditional Chinese medicine (TCM), Five Element Acupuncture, Japanese Acupuncture, French, Korean and Vietnamese styles. Each style has distinct ways of gathering patient data and treating disease. Within the context of Japanese acupuncture numerous sub-styles have emerged (28). Only two are mentioned here. Table 3 summarizes the most common styles practiced in the United States.

Table 3: Various East Asian medical styles: shaded boxes common in the United States

	Traditional Chinese Medicine	5 Element or Classical Acupuncture	Japanese Meridian/ Matsumoto	Korean Acupuncture	Vietnamese Acupuncture	Classical Balance Method	French/ Medical Acupuncture
Historical Context; Methods of Diagnosis	Four Methods of Examination Dx: Patterns of Disharmony	Four Methods of Examin w/ primary focus on pulse dx. All disease has emotional etiology	Palpation of various regions/ reflex zones, pulse & tongue	Different pulse dx; Patient dx involves dividing them into 8 constitutional types. Acu formula for each type	Dx made according to symbol of a tree. Excess or deficiency within 5 element diagram	Primarily based on Yi Jing; 4 Methods of Examination	Based on Six Divisions & Yi Jing
Herbs Yes/No	Yes	No	Yes; Kampo system	Yes	Yes	Yes	No
Needling	Tonification, sedation, strong stimulation, deeper insertion w/ gauge 28 – 34 needles. Needles are retained sometimes for up to 45 minutes. Point selection according to point actions and indications. (4,5)	Mostly tonification technique. Insertion is 1 – 2 mm deep w/ very thin needles. Feedback system via pulse diagnosis. Point selection according to Constitutional Factors (CF), point names, and 5 element points. Needle retention time varies from 5 sec – 15 minutes (ii)	Tonification, sedation technique. Insertion is 1 – 2 mm deep w/ very thin needles. Instant feed-back system via palpation of pulse or abdomen if practitioner reached correct point. Also use intradermals, press balls, magnets, ion pumping cords (ii) (28)	Horary points serve as transmitter, 5 Element points as receiver (ii)	Tonification, sedation techniques (ii)	Tonification, sedation technique. Point selection according to Six Division channel assoc. (ii)	Tonification, Sedation. Point selection according to Yi Jing trigrams, 5 Elements and Six Divisions. Common use of electro-acupuncture for analgesia (9)

Receiving Acupuncture

Acupuncture needles are very fine, about as thick as a hair and flexible, with average lengths varying from 1/4 " to 1.5" long. Generally, needles are inserted just below the surface of the skin but they may be inserted somewhat deeper in areas of heavier cushioning. Acupuncture bears no resemblance to the feeling of getting an injection, as the main source of pain from injections is the hollow needle and the medication being forced into the tissue by pressure. Acupuncture needles are used to attract or disperse energy along the meridians, not to inject. Different needle techniques are applied to different points which are based on the East Asian diagnosis and treatment strategy. Most patients find the treatments very relaxing, which

brings on a feeling of well-being. Some people experience a light form of trance or even go to sleep during treatment. A patient may feel a slight sensation upon insertion of the needle, then pressure or a "dull" or "surging" feeling when the needle reaches the "*qi*" or correct point. Some people report heat, cold, or heaviness sensations along the meridian pathway from the needle placed on that meridian.

Statistical data on acupuncture reveals that it is extremely safe; about 2 % of all needles placed cause minor bleeding and/or bruising. A recent report from Japan reported that of a total of 55,291 acupuncture treatments, 64 adverse events were reported (13, 14). In the English-language literature, five fatalities have been published over a 35-year span; 2 with cardiac puncture (15,16); 2 of staphylococcal septicemia (17) and 1 asthmatic death (18). Adverse events such as pneumothorax, hepatitis, delayed diagnosis, cardiac tamponade, etc. is estimated to occur in about 1 of 5,000 cases (19).

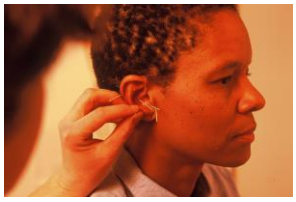
A competent East Asian medical practitioner will make appropriate referrals to western physicians for disease diagnosis or lab work when necessary. Many patients see western practitioners simultaneously or have been referred by them.

So how does sticking needles into a body stimulate energy to move along specific channels and pathways, moving from deep within the organs to the surface of the skin through soft tissue?

Research has shed some light on the subject but the existence and mechanisms of *qi* are still fairly mysterious. Still theoretical from a western point of view, there has been some progress in sorting out the hypothetical mechanisms for the therapeutic effects of acupuncture. Many of these hypotheses have already been published in this journal.

Acupuncture has clinical value for a number of complaints. In this country it has most notably become famous for the treatment of pain in musculo-skeletal conditions, arthritis and neurological disorders such as nerve pain. However, China has a long history in diagnosing and treating internal medical complaints using various treatment modalities such as digestive, urinary, gynecological, respiratory, and emotional disorders.

Acupuncture has shown positive results for nausea, vomiting, diarrhea, constipation, urinary incontinence, frequent urination, painful menstruation, cough, allergies, anxiety and depression just to name a few. Acute complaints may be relieved immediately while chronic cases tend to improve gradually. Chronic diseases usually take years to establish themselves, therefore, treatment will take longer to restore the patient to balance and health.
Acupressure can be used instead of acupuncture on patients that might be needle sensitive or don't require as strong of a stimulus to an acupuncture point. Usually, points are massaged one or two at a time, which usually has milder effects when compared to acupuncture.



During ear acupuncture very small needles are inserted into various points of the ear or by taping small subcutaneous tacks onto certain points which are left in for a few days. Ear acupuncture can be used as

an adjunct to any body acupuncture treatment but has more recently become popular for the treatment of addictions.

There are a number of drug clinics around the country that combine acupuncture along with counseling for the treatment of addiction.

Acupuncture needles attached to an electrical device increase the overall stimulation of any given point. This is commonly used in the treatment of pain from various origins.

Chinese Herbal Medicine

Within the context of East Asian medicine Chinese herbal therapy is probably the oldest treatment method. Though it is less known in the West it is rapidly gaining popularity. Roughly 5,000 years ago a legendary emperor, Shen Nong (3737- 3697 BCE) is said to have become enamored with the use of various plants and their medicinal properties. The *Shen Nong Ben Cao Jing - Classic Materia Medica* included about 360 medicinals. He was said to have personally tried many of the medicinals, including many poisonous ones. The majority of herbs came from the plant kingdom (Figure 15); the remainder was collected from the animal and mineral worlds (7).

Over the next couple of centuries newly discovered functions of various medicinals were passed on from generation to generation. With the advent of written documentation the *Nei Jing* appeared during the Warren States period 475 – 221 BCE. Various scholars put the *Shen Nong Ben Cao Jing* into writing around 200 BCE. During that time the famous Chinese physician Zhang Zhong Jing who witnessed the death of many from infectious disease wrote *Shan Han Lun - Treatise on Febrile Diseases Caused by Cold*.

By about 200 AD, Hua Tuo was the first to use ‘narcotic soups’ for patients in pain. Narcotic teas for minor surgical procedures were used around 1200 AD. By the Song dynasty (960-1279 AD) the pharmacopoeia encompassed about 1,000 substances taken from the plant, animal and mineral worlds. The pharmacopoeia included standardized herbal prescriptions, data on collecting and preparing medicinals, information regarding toxicity, instructions on herbal pastes, pills and poultices and their uses for various ailments (7). From China, herbal medicine spread throughout the rest of Asia.

Around 1590 AD the *Ben Cao Gang Mu – Grand Materia Medica* compiled by Li Shi Zhen denoted a cornerstone of Chinese herbal medicine. This 52 volumes book included about 1,800 single substances and over 10 000 traditional herbal formulas. At a later date, this book was published in many other countries. When Protestant missionaries introduced western medicine into China around 1700 utilization of its ancient medicine decreased. However, establishment of the People’s Republic of China in 1949 brought Chinese medicine back into mainstream health care; since then it has experienced resurgence in popularity.

The *Zhong Yao Da Ci Dian – Encyclopedia of Traditional Chinese Medicinal Substances* published by Jiangsu College of New Medicine in 1977, which includes about 5,700 single

medicinals, is a culmination of efforts dating back millennia. Each medicinal within this work is described and, among other parameters, includes characteristics regarding taste, actions and indications, recommendations on dosage, preparation and contraindications (20).

China has managed full integration of traditional Chinese and western medicine. 40 % of China's population use medicinals as their primary health care modality. Practitioners are usually trained in both practices. Patients are cross-referred on a continuous basis; they view both types of medicines as complementary, consulting one for some ailments and the other for others, or using both of them concurrently.

Classification of Chinese Herbs

Just as certain acupuncture points have different function to correct the flow of *qi* so do the herbs within the Chinese pharmacopoeia (Figure 16). As various organs, tissues and sense organs are attributed to each of the Five Elements Chinese medicinals are classified into various temperatures and tastes within this context. The five tastes into which herbs are categorized are pungent, salty, sour, bitter, and sweet. Just like eating chili peppers can cause one to break out into a sweat herbs can either warm or cool a person down. Herbs can be hot, warm, slightly warm, neutral, slightly cool, cool, or cold. Warm medicinals treat Cold conditions and cold ones treat Heat patterns. Thus, an herb can be warm in temperature and pungent in taste (21).

Chinese medicinals are classified further into different categories: herbs can harmonize digestion, stop cough, promote urination, resolve phlegm, quicken *blood* circulation, supplement *qi* and many other functions.

Herbs vs. Drugs

It is crucial to understand the difference between the Chinese herbal (i.e. ingesting the whole plant/animal/mineral substance) versus the western pharmacological approach (i.e. reducing a substance to its active ingredient). Western pharmacologists take a plant substance, find the active ingredient for treating a certain disease and extract it. The active ingredient(s) are then concentrated (6).

In contrast, a medicinal effective in treating many ailments, is considered superior in China. The more illnesses it treats, the more precious it becomes. *Ren Shen / Radix Ginseng*, for instance, is thought to be very precious because it is a tonic to many body systems. In western medicine, the term 'tonic' does not exist. While East Asian medicine considers a certain drug be superior western medicine may view it as inferior and vice versa. Chinese medicine follows nature's way, and seeks treatment success on a broader, more gradual path.

A good example is ephedrine. Derived from the Chinese herb *Ma Huang / Herba Ephedrae*, it was concentrated into a drug for the treatment of asthma in Western medicine. In its pharmaceutical form, ephedrine may overstimulate the heart; contribute to hypertension, rapid heartbeat and increased nervousness. In Chinese medicine, however, Ephedra is used in its raw form, where ephedrine has a concentration of less than 1 %. Although beneficial effects are more gradual, there are far fewer negative side effects. Ephedra in its natural form is gradually metabolized because the plant has buffers that offset potential side effects. Nevertheless, even in Chinese medicine, Ephedra is a medicinal that needs to be used with caution. Overdosing and long-term use are not recommended. According to the Chinese Materia Medica, its intended use is the dispelling of Wind Cold in the treatment of colds and asthma; therefore, it should not be used in 'herbal uppers' and in over-the-counter herbal pills for weight loss (22).

The process of isolating an active ingredient of an herb has become a popular phenomenon in western herbal medicine. However, the minute one isolates an active ingredient and standardizes it the herb is no longer an herb – it becomes a drug (22). It remains to be seen whether this trend will emerge in Chinese herbal medicine.

In general, herbs work more gently and gradually, except in acute conditions where results can be dramatic. Most patients seeking herbal treatment have chronic diseases.

Types of Herbal Administration

Many practitioners use prepackaged herbs in pill form, as patient compliance tends to be better. Individual tailoring of a prescription for a specific patient, however, is impossible, and they are weaker than herbal decoctions. Herbs may be administered as freeze-dried granules, which is preferred for infants, the elderly or patients that dislike herbal teas. Granules have the advantage of ease of use; they can even be put into capsules. Processing, however, increases the price; the debate on whether they are equally effective than decoctions, continues.

Chinese medicinals are used for a variety of complaints within all medical specialties. Dysmenorrhea, sore throat, allergies, fatigue, frequent urination, edema, incontinence, irritable bowel syndrome (23), depression and anxiety are just a few examples that are treatable with herbs.

After an East Asian pattern of disharmony and a treatment strategy have been established a formula is carefully tailored. It is important to note that no two patients are alike; this is reflected in the prescription of medicinals. Five patients with an identical diagnosis of headache will most likely all receive a different formula based on varying East Asian patterns of disharmony (23).

Therefore, Chinese medicinals cannot be prescribed without careful analysis of the patient. Chinese medicinals are hardly ever given singly; a tailored prescription usually includes a

variety of dried twigs, roots, barks, seeds, leaves, flowers and fruits numbering anywhere from six to twenty different herbs.

About 90 % of Chinese medicinals are plant based. The best herbs grow naturally in China; however, due to increasing demand the cultivation of medicinal plants has become a major agricultural industry in China. The parts of the plant used for medicinal purposes differ for each herb. In some plants, only the roots, in others, only the stems, flowers, seeds or leaves have medicinal value. Some plants are used whole. After the plants have been harvested, they are dried. Various substances have to be specially prepared, i.e. cooked in ginger, boiled in vinegar, honey-fried, cut a certain way, so that they may reach their least toxic and greatest medicinal state (24).

Animal substances are less commonly used within the Chinese pharmacopoeia. In today's China, great attempts are made to protect endangered species and to make substitutions whenever possible. Traditionally, animal substances are considered to be stronger medicinals. They are most commonly found in patent medicines -- herbs in pill form -- as one uses only a small amount of the animal substance.

Within East Asian medical practice practitioners in the West -- that utilize herbal medicine as a treatment modality -- use roughly 200 to 350 different herbs in a typical herbal pharmacy. Herbs are prescribed in their individual raw form and tailored exactly to the pattern diagnosis of each patient. After decocting the herbs into a medicinal tea the patient drinks it daily. Via this method of administration, the ingredients are absorbed quickly after ingestion and take effect immediately. Taking herbs for a particular illness allows the patient to be treated daily, which might contain the overall cost of care because patients require fewer acupuncture treatments. Herbal medicine can enhance the efficacy of the overall treatment thereby increasing the speed of recovery.

Summary

East Asian medicine's correspondence thinking and eternal concepts can be applied into virtually every aspect of life; when applied to physiology, psychology and their pathologies these principles assist in guiding patients toward achieving their inner balance of *yin*, *yang*, *qi*, *blood* and the organ network.

The theoretical body of knowledge of East Asian medicine remains largely a scientific paradox yet there is progress within the field of bio-electromagnetics and biochemistry attempting to explain these concepts at least hypothetically (25,9).

Physicist K.C. Cole states: "What we see depends on what we look for. (…) Which is the 'true' perspective? It may be that the only wrong perspective is the one that insists on a single perspective." (27)

The future holds much promise, as research is likely to continue to understand the workings of East Asian medicine. If the latest studies are any indication complementary and alternative medicine (CAM) is here to stay (28). Encouraging studies on both acupuncture and Chinese herbal medicine have already been published in prominent medical journals. Continued

outcome studies and well-designed randomized controlled trials will further evaluate the validity and efficacy of East Asian medical modalities.

Note

i. East Asian medical terms are capitalized or written in italics to distinguish them from their western meanings: for example, blood viewed hematologically is different from *blood*, a Vital Substance

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iii. Graph of posterior view of male with acupuncture points: Courtesy of Forschungsgruppe Akupunktur. Dr. med. Albrecht Molsberger. www.akupunktur.info

Photos

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