

Classical Chinese Medicine and Contemporary Science: The Vascular Model of Disease Pathogenesis. A Common-Path Theory of Human Illness

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ABSTRACT

The practice of physician acupuncture faces unique challenges in its development and inclusion as a recognized medical specialty. Information contained in early Chinese medical texts offers solutions to some of the divides that separate Chinese Medicine from contemporary biomedicine. Recent advances in classical text research—made possible by the establishment of Chinese language databases—provide new hypotheses of disease pathogenesis and new strategies for treating various acute and chronic illnesses.

The Vascular Model of Disease Pathogenesis summarizes some theories of early Chinese medicine into language recognizable by modern science. This theory bridges some of the current disparities between ancient and modern practices and offers a new model of human health, illness, and clinical therapeutics.

Key Words: Classical Medicine, Neijing, Acupuncture, Traditional Science, Vascular Model of Disease Pathogenesis (VMDP)

INTRODUCTION

CHINESE MEDICINE (CM) is one of the world's oldest and most-practiced forms of health care. Around the world, many patients are helped by these therapies on a daily basis. Yet, recent reevaluations of early Chinese medical texts suggest that current practices may yield only partial efficacy from these therapies. The reasons for this are complex and include issues of history, culture, politics, language, and basic medical theory. Navigating these issues successfully is a critical challenge facing the development of physician acupuncture and the broader field of CM.

CURRENT CHALLENGES

Some challenges facing the practice of physician acupuncture are outlined in the sections below.

Basic Principles

Many principles in CM were described in early Chinese medical texts written between the fourth century BCE and second century CE.* While these texts are recognized as the theoretical foundation of Chinese medicine, their full meaning has remained elusive over the centuries.¹

Over the past 25 years, a majority of surviving early Chinese texts have been archived on computer databases.[†]

*Examples of important early medical texts include the *Huangdi Neijing: Suwen* and *Lingshu* (*Yellow Emperor's Inner Classic: Plain Questions and Divine Pivot*), *Shennong Bencaojing* (*Shennong's Herbal Classic*), *Shanghan Lun* (*Treatise on Cold Damage*) and *Zhouyi* (*Zhou Dynasty Classic of Change*—more commonly known as the *Yi Jing* or *I Ching*).

†The CHANT database at the D.C. Lau Research Centre for Chinese Ancient Texts at the Chinese University of Hong Kong was the primary source for the Chinese text used in this article. This project started in 1988.

TABLE 1. PRIMARY AND SUBSIDIARY DEFINITIONS OF PRINCIPLE

Basic principle	Primary principle	Secondary manifestations
Yin Yang 陰陽	Impulse of the universe to expand and contract	Cold & heat, night & day, heaven and earth etc.
Qi 氣	Fabric of space–time	Energy, steam, clouds, etc.
Wuxing 五行 Five Circulations	Motion of the stars & planets around the pole star	Five elements, Four seasons, Wood, Fire, Earth, Metal, Water. etc.
Sanyin sanyang 三陰三陽 Shaoyang, Yangming, Taiyang, Jueyin, Shaoyin, Taiyin	Patterns of motion within the biosphere	Yangming channel, Yangming syndrome, etc.
Shen 神	A dimension of space–time around which life organizes itself that does not follow normal fluctuations of nature	Spirit, intelligence, vitality, God
Bi 痺 Obstruction Syndromes	Regional anatomical freezing of the space–time breath	Painful obstruction syndromes, arthritis

Primary definitions of medical principle provide the elementary meaning of the principle; subsidiary definitions describe secondary manifestations of the basic principle. Here, primary definitions from the *Huangdi Neijing: Suwen* and *Lingshu* (refs. 1 and 2) are shown alongside corresponding subsidiary definitions found in contemporary Traditional Chinese Medicine.

This allows for new types of Sinological text research that have shed light on the meanings of early Chinese medical theories—theories that often differ from current understanding and that are, at times, curiously biomedical in concept. Early medical texts provide innovative ideas of human health and disease and offer new promise to Chinese and Western medicine as well as to Western scientific research and methodologies.

When considering the role that basic medical principles play in clinical medicine, it is useful to consider the concept of primary and subsidiary definitions of meaning. Primary definitions describe the elementary meanings of a given principle; subsidiary definitions describe secondary manifestations of the primary principle. For example, to understand that the terms Yin (陰) and Yang (陽) describe a primordial tendency of the universe to expand and contract reflects a primary understanding of these terms. To know how these principles qualify different states of cold and heat represents a subsidiary understanding of these terms. Here, different conditions of heat and cold arise from the primary forces of expansion and contraction and, thus, represent secondary manifestations of the primary principle. Knowing primary definitions allows one to comprehend subsidiary manifestations but the reverse is not always true (Table 1).[‡]

The distinction between primary and subsidiary definitions becomes important when examining the role the physician plays in clinical medicine. Regardless of any

specific professional licensure, a physician can be understood to be an individual who, who by virtue of training and ability, manages medical complexity successfully from a thorough knowledge of basic medical principles. In contrast, regardless of licensure, ancillary health care workers are introduced to basic medical theories but typically practice from sets of established rules and protocol guidelines based on subsidiary manifestations of principle. Using this metric, most CM in the West today is practiced at an ancillary health care level. Put another way, while there are many CM practitioners in the West, there are few who practice as CM physicians.[§] Early medical texts help resolve this issue by providing *sine qua non* definitions of elementary Chinese medical principles such as Qi (氣), Yin (陰), Yang (陽), Jing (精), Shen (神), and Wuxing (五行).

Historical and Cultural Understanding

In the West, many practitioners lack basic knowledge of Chinese language and history. They are thus dependent on secondary sources of information that vary in accuracy and quality. Lack of historical and cultural understanding also limits the capacity to test new ideas and practices and leaves the profession, as a whole, vulnerable to speculation and hearsay. Hypotheses and statements may too often be valued on the basis of narrative persuasion, general esthetics, or nonspecific resonance with archetypal symbolism rather than on the precision or accuracy of ideas. In contrast, established Western medical specialties, such as general

[‡]Early Chinese texts describe complex patterns of change and motion that are reflected in the primary meanings of the terms Yin (陰) and Yang (陽). In contrast, qualities of heat and cold represent descriptions of discrete physical states. Typically, descriptions of complexity, change and motion characterize early Chinese medical thinking; descriptions of static states and unchanging material reality epitomize Western medical thought.

[§]A Western medicine-trained physician performing CM techniques is not commensurate with an individual practicing as a CM physician. It is the view of the author that physician acupuncturists should strive for high-level competency in both Western medicine and CM—being fluent in both systems and not simply practicing as allopathic physicians who utilize CM techniques.

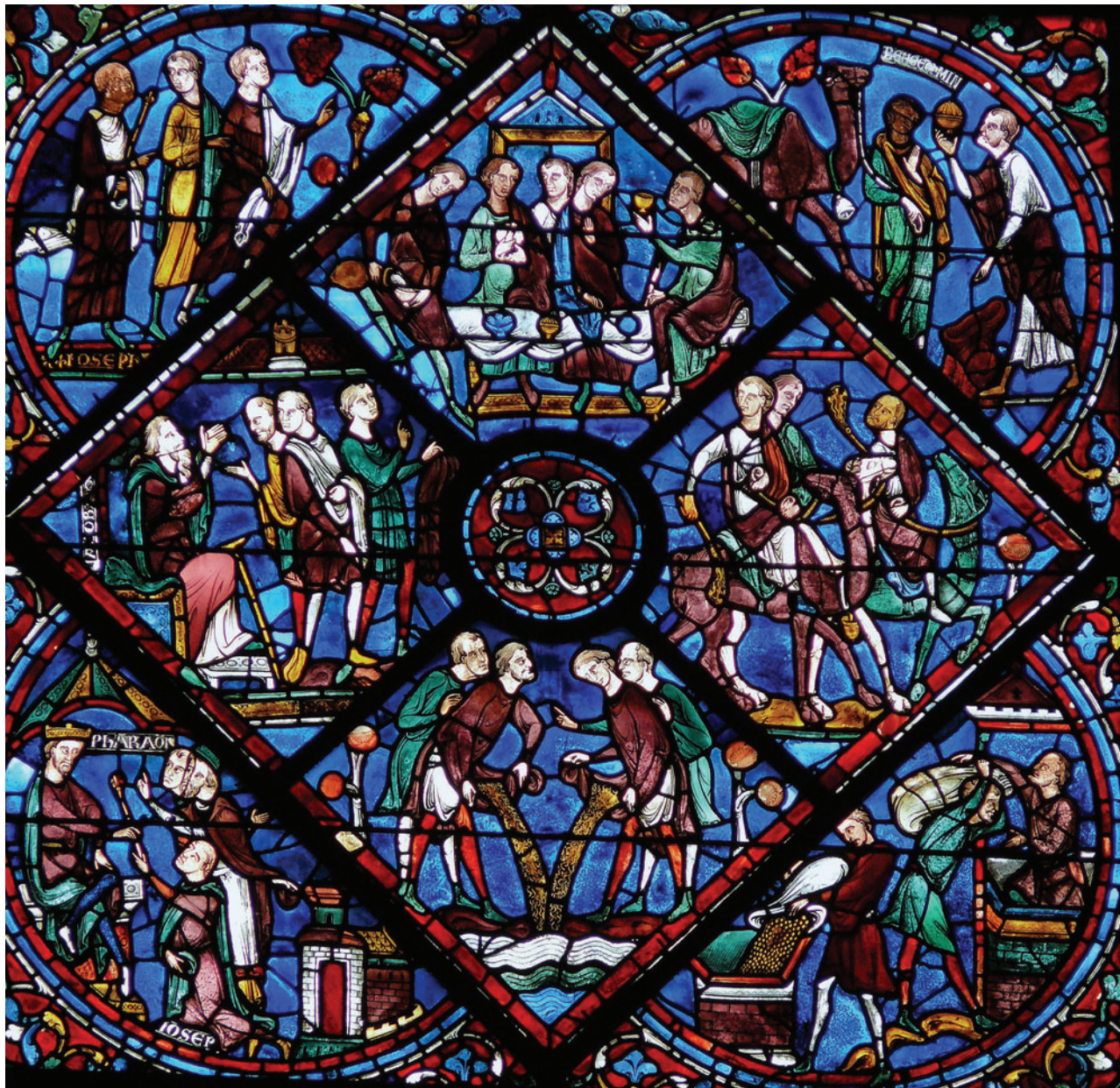


FIG. 1. Traditional versus modern science. Traditional and modern sciences differ in basic ways. In a window from Chartres Cathedral, scenes of religious life are seen intermingled among geometric patterns that frame the scene. Modern observers will tend to focus on the scenes of religious life. In contrast, traditional science investigates the organizing patterns that lay behind the world we see. In traditional systems, different manifestations of nature have scientific meaning to the degree that they clarify deeper questions of the unseen, organizing patterns of nature. (Source: https://upload.wikimedia.org/wikipedia/commons/e/ef/Chartres_-_Vitrail_de_la_Vie_de_Joseph.JPG ; figure is in the public domain).

surgery, share a common culture, language, and history that allow Western medicine's members to test new ideas better.

Clinical and Theoretical Fragments

Like boulders coming to rest at the bottom of a glacial moraine, CM in the West currently consists of a diversity of practices drawn from many sources. This heterogeneity is

sometimes described as the “rich tapestry” of CM. While CM does draw from many sources, in the West, diverse approaches are often linked in ways that lack theoretical cohesion. This presents basic challenges to the profession. For example, how is relevant research pursued when individual practitioners each practice something unique? Lacking organizing themes, it is difficult to understand these diverse practices in a unified framework. Early medical

texts help address this problem by providing the fundamental theories and principles that are able to unify diverse doctrines and practices.

Traditional Versus Contemporary Science

Modern biomedicine is a relatively young science. Furthermore, it is only one of a number of ways that can be used to test the world. Like any descriptive system, modern science has both strengths and weaknesses. In particular, it often has difficulty analyzing issues of change and complexity found in natural systems. Traditional Chinese medical science offers an alternative paradigm to modern scientific inquiry that can be used coequally to test and gain useful insight into the world.

To be recognized as a true science any intellectual activity must meet several basic criteria: (1) Scientific conclusions must be based on (or be consistent with) observed natural phenomena. (2) Scientific conclusions must be meaningful within a broader theoretical framework. (3) Scientific conclusions must have consistent, predictive capacities.

According to these criteria, both contemporary medical research and traditional Chinese medical research qualify as true sciences, although the principles and methods they use to reach their conclusions are different. Importantly, traditional Chinese scientific research represents a unique instance of a scientific culture with its own established rules and principles. Until these differences of scientific culture are understood, modern scientific inquiry is likely to stay limited in its conclusions about, and insights into, these traditional practices.

Traditional Chinese medical research differs from contemporary science in several basic ways. Some of these include: (1) Traditional Chinese science sees the distant past as the source of theoretical authority and inspiration; contemporary science often values what is new and currently discovered. (2) Traditional Chinese science prioritizes the study of the unseen cyclical patterns of nature that are thought to exist behind the visible world we observe; contemporary science emphasizes the manifest world as it is perceived directly. (3) Traditional Chinese science prioritizes the study of change and complexity in natural systems; contemporary science commonly limits research variables by intentionally excluding issues of change and complexity in order to understand the world in discrete segments (Figs. 1 and 2).

Classical Medicine

Early Chinese medical texts contain an extensive amount of theoretical and clinical information. Much of this material awaits further research and lies outside the scope of this article. But a summary of the ideas related to medical acupuncture—as described in early medical texts such as the *Huangdi Neijing: Suwen* and *Lingshu*—can be described as in the sections that follow.^{2,3}

The universe is a breath that moves through different states of order and complexity. Early Chinese medical theory is built around the central hypothesis that, at

the most basic level, the universe behaves as breath that moves back and forth between different states of chaos and order. In early medical texts, the primordial forces of cyclical motion are called Yin (陰) and Yang (陽).^{¶,||} Any medical practice that cannot trace its ideas back to this original principle does not exist within the traditional rubric of classical Chinese medicine.^{**††}

All aspects of existence arise from the universal Yin (陰) and Yang (陽) breath. All phenomena in the universe—including the human body—derive from different expressions of the universal Yin (陰) and Yang (陽) contraction and expansion impulses. In medicine, this means that all aspects of the physical body, and the experience of health and illness, can be traced back to different phase motions of this breath.^{‡‡}

Where the body moves freely with the universal Yin (陰) and Yang (陽) breath there is health; where it does

[¶]Early Chinese medical texts describe the relationship that exists between patterns of cyclical change and human health and illness. In early texts, the primary forces of cyclical change are called Yin (陰) and Yang (陽). In the *Huangdi Neijing: Suwen* and *Lingshu*,^{2,3} both the motive impulse of these motions and the complex motion patterns they generate on earth are called *dao* (道). The intrinsic ruling factor that keeps these motions moving with overall coherence and organization is called *ji* (機) mechanism. In this article, the author summarizes these different qualities by using the term *breath*.

^{||}Cf. the following description given by the nineteenth-century missionary Ernst J. Eitel: “Nature, as I have had occasion to remark before, is looked upon by the Chinese observer as a living breathing organism, and we cannot be surprised, therefore, to find the Chinese gravely discussing the inhaling and exhaling breath of nature. In fact, with the distinction of these two breaths, the expanding breath, as they call it, and reverting breath, they explain almost every phenomenon in nature. Between heaven and earth there is nothing so important, so almighty and omnipresent as this breath of nature.” From *Feng Shui, or, the Rudiments of Natural Science in China* by Ernest J. Eitel [1873], published in Hong Kong by Trubner & Co.

^{**}A practitioner inserting a needle into a trigger point may achieve therapeutic results, but, unless this is done according to the theoretical principles of Chinese medicine, it is not considered a CM therapy.

^{††}Some ideas, such as the varied theories of herbal medicine from later dynasties, may seem far removed from early medical theory. The ideas upon which these succeeding theories are based, however, may be traced back to earlier texts such as the *Huangdi Neijing: Suwen* and *Lingshu*.^{2,3} This is a primary reason why these texts are considered to be foundational.

^{‡‡}In early Chinese medical theory, different aspects of the physical body arise from different qualities of phase motion. For example, the liver, gallbladder, connective tissue and nails were thought to arise from the expanding phase of the universal Yin (陰) and Yang (陽) breath; the lungs, respiratory tract, large intestine and skin arise from the contracting phase of this breath. On Earth, the different phase directions of the Yin (陰) and Yang (陽) breath are typically notated as Wood (木), Fire (火), Earth (土), Metal (金), and Water (水) and/or East (東), South (南), Center (中), West (西), and North (北), respectively.



FIG. 2. Patterns of Nature's complexity and change. Clouds moving across the surface of the earth behave according to well-recognized laws of scientific meteorology. Yet, on a second-to-second basis, it is impossible to predict their motion because of the overall complexity of their circumstances. Similar patterns are seen in natural systems such as the physiologic processes of the human body. In these instances, explanations provided by the modern scientific method often prove to be inadequate. (Source: http://upload.wikimedia.org/wikipedia/commons/d/db/Nasa_blue_marble.jpg ; figure is in the public domain).

not there is impairment and illness. When the body's circulations move freely in response to innate physiologic processes and the larger external patterns of Nature, the individual is considered healthy and should commonly live to be ~100 years old. During their lifetimes, they should not become ill or require medical attention. However, when this circulation is impaired, the individual frequently becomes sick and life expectancy is cut roughly in half.^{§§,¶¶}

^{§§}These descriptions are given in the first chapter of the *Huangdi Neijing* (Yellow Emperor's Inner Classic) 上古天真論 "Treatise on the Heavenly Truths of Ancient Times."¹

^{¶¶}Cf. *Lingshu* chapter 9^{2,3}: 所謂平人者不病不病者脈口人迎應四時也上下相應而俱往來也六經之脈不結動也本末之寒溫之相守司也形肉血氣必相稱也是謂平人. "The term 'pingren' (平人) balanced person, (means) no illness. No illness (means) that the *maikou* (脈口) radial and *renying* (人迎) carotid pulsations change with the four seasons, that the (motions) of ascent and descent move in accordance with the (motions) of departing and arriving, that the *mai* (脈) blood rivers of the six channels move without restriction, that the (forces) of cold and warmth moving within the roots and branches (of the body) are protected and governed, that the (circulation) within the form, flesh, blood and qi do not contend together. This is called (the state of being) a 'pingren' (平人 balanced person)."



FIG. 3. Original descriptions of acupuncture circulation. The original descriptions of acupuncture theory describe the anatomical pathways and clinical qualities of the body's three-dimensional *mai* (脈) (blood vessel) circulation. Later, as acupuncture point theory rose in influence, many of these pathways were shifted to the external surface pathways of the body and, in the process, were displaced from their original location near blood vessels. Modern descriptions of vascular circulation, such as those seen in this contemporary angiogram, share significant commonalities with early acupuncture theory. (Source: Vince Michaels/Getty Images).

The primary pathology of human illness is the Bi (痺) syndrome. In early Chinese medical texts, the primary pathology of human illness was described as the Bi (痺) syndrome.^{|||} Bi (痺) syndromes are localized areas of tissue obstruction in the body's three-dimensional anatomy where the universal Yin (陰) and Yang (陽) breath ceases to move freely. These obstructions were seen to arise from a

^{|||}In modern Traditional Chinese Medicine, the term Bi (痺) syndrome describes a category of "painful obstruction syndromes"—a clinical classification of painful arthritis syndromes. This represents a narrower definition than was originally envisioned in early medical texts and illustrates the difference between primary and subsidiary definitions of basic principles.

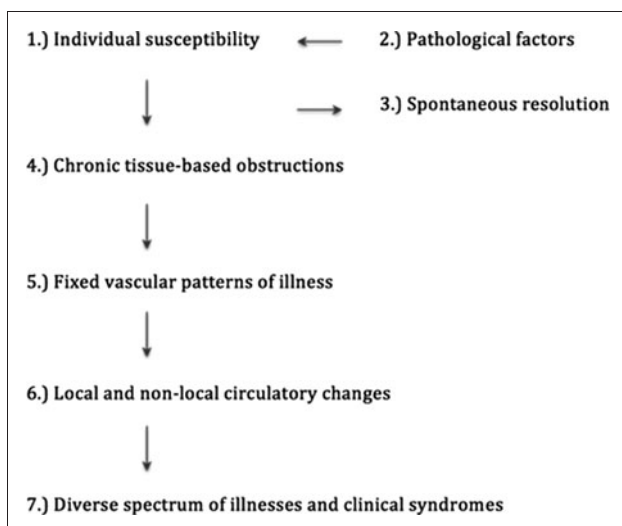


FIG. 4. The Vascular Model of Disease Pathogenesis (VMDP). The VMDP summarizes basic ideas from early Chinese medical theory and translates them into a language recognizable to modern clinicians and scientific researchers. In this model, human disease proceeds in a series of discrete steps: Inciting pathologic events disturb areas of preexisting weakness, resulting in acute impairments of regional blood circulation (1,2). Acute circulation disturbances then either spontaneously resolve (3) or generate chronic tissue plane-based obstructions (4). Chronic obstructions generate fixed vascular configurations that generate the conditions necessary for chronic illness to develop and flourish (5,6). Fixed vascular impairments generate diverse clinical syndromes depending on the constitution of the individual patient, the location and nature of the original obstruction and the environmental milieu in which they occur (7).

variety of causes and can appear anywhere in the human body.*** Bi (痺) syndromes create impaired patterns of flow (順) and counterflow (逆) circulation and create functional blood reservoirs that impair the body's homeostatic regulation and hold the circulation in fixed patterns of illness.†††

In early Chinese medical theory, Bi (痺) syndromes were seen to be the physiologic basis for the majority of chronic human diseases. Early medical texts, such as the *Neijing*,¹ focus extensively on the diagnosis and clinical resolution of Bi (痺) syndromes. Classical acupuncture itself was an ex-

***In early medical texts, Bi (痺) syndromes arise from several factors. These include: (1) issues of climate/environment; (2) issues of lifestyle and diet; (3) issues of prenatal and postnatal constitution; and (4) issues of emotional distress. Each pathologic factor operates by destabilizing the body's vascular equilibrium and predisposes the individual to illness. In modern practice, environmental pollutants, medications, surgery, and injuries are also seen in the development of Bi (痺) syndromes.

†††Bi (痺) syndromes form functional blood reservoirs that trap circulating pathogens within the body's three-dimensional anatomy. When Bi (痺) syndromes are released through correct diagnosis and treatment, significant amounts of pathogenic factors can be released into the circulation. This is a potential danger for both patient and practitioner and must be approached with care.

Cancer surveillance system
Endocrine system
Immune system
Coagulation system
Microvascular perfusion pressure
Neurotransmitters/neuromodulators
Regulation of the local cellular metabolome
Regulation of body temperature
Regulation of body pH
Removal of cellular waste
Systemic blood pressure
Tissue oxygenation
Tissue nourishment

FIG. 5. Role of the human vascular system. A majority of the body's homeostatic regulatory systems rely on the vascular system to carry out their functions. When this circulation is poorly regulated, the body's healing capacity becomes impaired and acute or chronic illness is a common result.

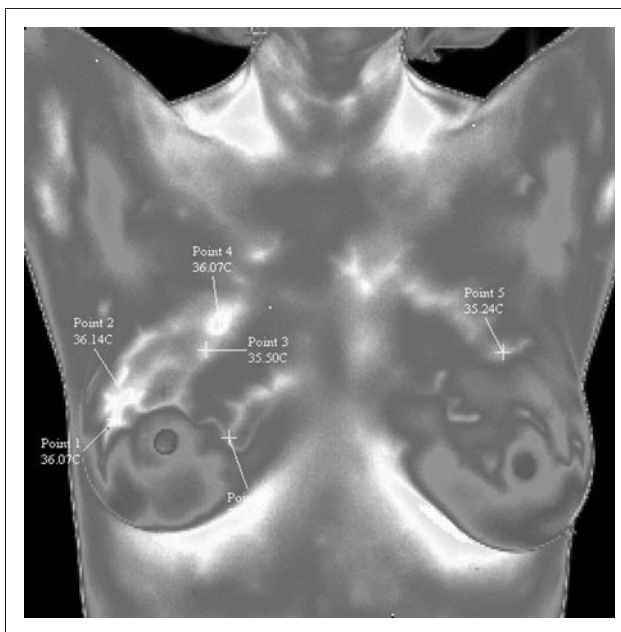


FIG. 6. Human microcirculation. The human vascular system comprises a complex collection of circulation patterns that constantly shift in relation to activity, physiology, and external environmental changes. In early Chinese medical texts Bi (痺) syndromes cause chronic obstructions of both local and nonlocal vascular circulations that may allow illnesses to arise and persist. Here, thermographic images show complex, surface vascular changes in a patient with breast cancer. Early Chinese medical theory predicts that alterations in micro- and macrovascular circulation antecede both acute and chronic illness such as cancer. Such a causal link remains to be proven by modern research methodologies. (Source: <http://upload.wikimedia.org/wikipedia/commons/7/73/BreastCancerRightSample1.jpg>; figure is in the public domain).

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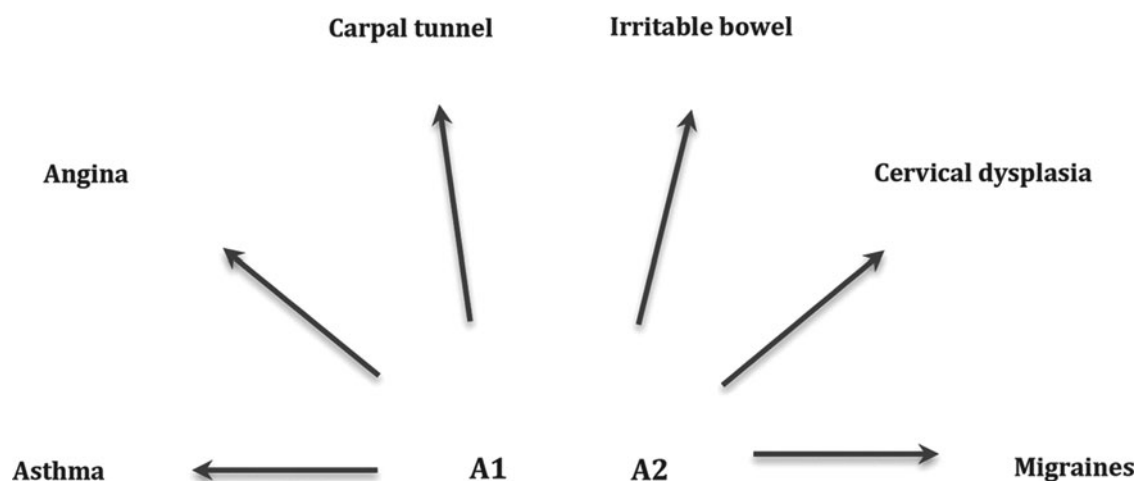


FIG. 7. Tissue plane obstruction and chronic illness. Bi (痺) obstructions are physiologically inert impairments that create complex shifts in the body's vascular ecology and set the stage for chronic illness to arise and persist. Here, identical Bi (痺) obstructions occurring in two different patients (A1, A2) generate two distinct clinical syndromes because of differences in each individual's constitution and unique response. Two unique clinical syndromes arise from the same cause but are treated by the same therapeutic method.

ternal surgery that was used to resolve Bi (痺) syndromes where they existed in the various tissue planes of the body. When Bi (痺) syndromes are treated correctly and vascular circulation restored, in many cases, the body's homeostatic mechanisms are reestablished, areas of impairment normalize, and human illness spontaneously resolves in a highly orchestrated and elegant way.

Modern acupuncture channels arose from early complex descriptions of the human vascular system. Early Chinese medical texts provide complex descriptions of the human vascular system.^{***} These depictions encompass the entire micro- and macrovascular circulation of the human body and provide portrayals that, in some ways, eclipse even modern understanding of blood circulation in both scope and insight.^{§§§} For various historical reasons, the initial associations with blood circulation faded relatively early and point action theory rose in prominence and displaced some of these early ideas. Attention then shifted to surface channel anatomy and the location and action of specific acupuncture points. Pathways were often moved away from their original locations near

blood vessels (Fig. 3). The loss of association between acupuncture theory and the body's vascular anatomy remains a significant obstacle to the integration of traditional Chinese medical practices and contemporary biomedicine.

THE VASCULAR MODEL OF DISEASE PATHOGENESIS

Early Chinese medical texts define principles that can be used to construct a model of disease recognizable to the vernacular of contemporary biomedicine and modern scientific research. The Vascular Model of Disease Pathogenesis (VMDP) is a summary of some ideas of early Chinese medical theories designed to allow better recognition and understanding by modern researchers and clinicians (Fig. 4).^{¶¶¶} A primary goal of this model is to provide a conceptual and translational bridge for modern researchers and clinicians to access some ideas of early Chinese medicine for evaluation, testing and clinical implementation.

Concepts of VMDP

VMDP is stated according to the following sections below.

^{***}Early descriptions of human circulation offer not only detailed descriptions of the physical anatomy, they also articulate how these structures function dynamically in living systems, how these structures function in health and illness, and how these structures are perceived as individual felt experiences. Thus, these descriptions augment Western anatomical descriptions that are largely based on observations of nonliving systems.

^{§§§}Early descriptions of *mai* (脈) blood vessel circulation categorize and detail signs and symptoms of impaired regional blood flow circulations. These observations currently have no correlation in Western medicine.

^{¶¶¶}The VMDP is a model developed by the author from early Chinese medical theories to facilitate the discourse between contemporary biomedicine and traditional Chinese medical science and to increase access to these advanced ideas for contemporary practitioners and researchers.

All human illnesses involve a primary impairment of blood circulation. Regardless of the inciting event, all pathologic processes in the body must disrupt either micro- and/or macrovascular blood circulation to become a recognized human illness or clinical syndrome. Without a disruption of vascular circulation, pathogenic factors simply represent disease potential but cannot express as actual human illnesses and impairments. Some of the reasons for this are intuitive: a majority of the body's homeostatic mechanisms act via the blood circulation (Fig. 5). When micro- and/or macrovascular circulation patterns are impaired, regulatory processes cease to function adequately. The body's healing mechanisms begin to fail and the individual becomes susceptible to illness.^{||||}

Impairments of blood circulation represent a "common-pathway" in disease pathogenesis. Disruptions of vascular circulation represent a functional "gate" through which all pathologic processes pass before they become a recognized illness. Because vascular impairments are the fundamental prerequisite for disease expression, they are a common step in disease pathogenesis that may be targeted for clinical intervention. This suggests that previously diverse and unrelated categories of human illness can potentially be treated by a single and unified therapeutic protocol.^{****}

Chronic vascular impairments generate a diversity of local and nonlocal clinical syndromes. Because the vascular system consists of a complex set of linked regional circulation ecologies, localized tissue plane impairments in a specific location generate both local and nonlocal clinical effects. How a given impairment expresses clinically depends on the location and nature of the original obstruction, as well as the constitution of the individual patient and the

environmental milieu in which that patient resides. Because tissue-plane obstructions exist outside the body's normal physiologic processes, primary obstructions themselves are most often clinically silent and typically express through secondary, nonlocal signs and symptoms (Fig. 6).^{†††}

Chronic illness results from fixed obstruction patterns within the human vascular circulation. The human vascular system comprises an elaborate set of inter-related micro- and macrovascular ecologies that constantly shift in relation to complex changes of physiology, activity, and the external environment (Fig. 7). Chronic illnesses arise when obstructions in the body's anatomical tissue planes constrain vascular circulation, resulting in a fixed "configuration of illness." This sets the stage for impairments in homeostatic regulation and allows for the formation of chronic illness. In modern practice, tissue-plane impairments remain largely unrecognized; most health care systems in today's world do not recognize these primary impairments but instead attend to the various secondary sequelae generated by these underlying obstructions.

Treatment of vascular obstructions reestablishes the body's healing capacity. When the vascular circulation is normalized through proper diagnosis and treatment, in a majority of cases, homeostatic regulation returns and the body spontaneously and elegantly heals itself through a highly intelligent process that has few significant, adverse effects.

DISCUSSION

Early Chinese medical texts provide a complex description of the body's vascular circulation and facilitates an understanding of the role that vascular impairments may play in the expression and treatment of human illness. In these descriptions, various inciting events generate fixed obstructions in the body's tissue planes that, in turn, give rise to both transient and stationary alterations in the body's vascular ecology. This results in diverse patterns of illness and clinical syndromes.

These theories suggest that human illness may result, not from the overt expressions of illness that are commonly observed but, rather, arise from the many and diverse ways in which the body's vascular circulation and homeostatic regulations fail. The majority of these impairments occur in ways that are currently unrecognized by many current health care systems. An integral part of these ideas is the idea that

^{||||}On first examination, the idea that vascular impairments represent a common pathway for the development of all human illness may seem improbable. Yet, on closer examination, this hypothesis does not seem entirely far-fetched. Infectious diseases, such as tuberculosis, are not considered vascular diseases per se. They do, however, affect regional microcirculations in the forms of inflammation and alterations in local blood flow. Metabolic diseases, such as diabetes, cause clinical syndromes primarily through their effect on micro- and macrovascular blood flow. Psychiatric illnesses show significant differences in regional brain circulation on dynamic scans. Inflammation—a hallmark of many human diseases—affects the microcirculation in well-documented ways. Even general conditions, such as stress, alter in blood pressure, heart rate, regional muscle blood flow, and hormonal regulation. In fact, on closer examination, it is difficult to identify any human disease that does not impair micro- or macrovascular circulation as an integral part of the disease process. This suggests that there may be validity to these early ideas and that they are worthy of further investigation.

^{****}Early texts such as the *Neijing*¹ present a unified therapeutic approach to diverse human illnesses. Specifically, this was the targeted regulation of the body's micro- and macrovascular circulations.

^{†††}By definition, Bi (痺) syndromes represent localized areas of the anatomy where normal homeostatic mechanisms do not operate; these areas do not communicate with the body's physiology and thus are, themselves, most often clinically silent. During treatment with acupuncture needles, Bi (痺) syndromes may appear to the clinician as areas of devitalized, leathery, or wooden tissue.

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vascular impairments represent a common pathway in the evolution of illness that can be strategically targeted for resolution through correct diagnosis and treatment in a diverse set of illnesses and clinical syndromes. If modern research validates this hypothesis, it have the potential to significantly alter clinical practice and disease outcomes.^{****§§§§}

According to these ideas, the single greatest health challenge facing the world today may not be any commonly recognized health care problem. Rather, it may be the inability of current health care therapies to understand, diagnose correctly, and treat complex vascular impairments and areas of homeostatic dysregulation that occur in a diverse set of medical illnesses and clinical syndromes. Early Chinese medical texts, such as the *Huangdi Neijing*, give specific instructions to resolve tissue-plane-based obstructions and normalize vascular circulation. Because early Chinese medical therapies are low-cost, have few side-effects, require little physical infrastructure, and can be used in a variety of global health care settings then, if proven true, the impact of these ideas on human suffering and health care dollars could be significant.

CONCLUSIONS

Early descriptions of CM offer a different view of the body from those currently given by either Western medicine

^{****}According to this model, a definitive measure of illness progression and resolution may be assessments of micro- and macrovascular blood circulation. Thus, in a case of acute hepatitis, while decreases seen on liver-function tests and fever may herald significant clinical improvement, the VMDP predicts that restoration of hepatic micro- and macrovascular circulation may be a more accurate predictor of disease resolution. Similarly, if liver-function tests and clinical signs return to normal but hepatic micro- and macrovascular circulation remains impaired, this model suggests that some of the effects of illness are still present, even though standard clinical signs and symptoms have resolved.

^{§§§§}If this model proves valid, future preventive health evaluations could conceivably include assessments of micro- and macrovascular circulation—thus, identifying areas of homeostatic dysregulation years before signs and symptoms of illness or clinical syndromes arise.

or contemporary CM (Traditional Chinese Medicine). The VMDP summarizes and articulates some ideas of early Chinese medical texts and provides a new model of human health and illness. If validated by contemporary research, the VMDP has the potential to alter the practice of medicine significantly and become an important discovery of modern times.

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DISCLOSURE STATEMENT

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