

Applied Kinesiology Chiropractic and Traditional Chinese Medicine

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Narrative abstract: In modern Western chiropractic health care we find many similarities between our approach and that of both ancient and present-day Traditional Chinese Medicine (TCM) doctors or the acupuncture profession. First, we are concerned with the control of organs, glands, and tissues, primarily by way of the nervous system. Rather than give a patient a drug to influence an organ, we find out why the organ is not functioning as it was designed to and then release that interference. This correlates with the acupuncturists' attempts to balance Chi within the body. Second, chiropractors are concerned with diet and nutrition and lifestyle in order to give the body the building blocks it needs to live, and to be certain there are no adverse chemicals and pollutants interfering with normal body function. This paper presents a detailed explanation of the integration of TCM within Applied Kinesiology Chiropractic, and its justification within modern biomedical science.

Indexing terms: Applied Kinesiology; Chiropractic; Traditional Chinese Medicine; TCM, Chi

Introduction

'To administer medicine after an illness begins is like digging a well after becoming thirsty or casting weapons after a battle has begun.' Nei Jing

What you are about to embark upon is a journey of nearly 5,000 years ... with a few exciting accelerations in the past 50! This is how long acupuncture and applied kinesiology have existed. However, even this is in debate because many anthropologists believe acupuncture may be ten thousand years old from markings found on human remains. We will begin with one of the oldest known treatises on acupuncture, the 24-volume Nei Jing. Its origin is attributed to Huang Ti, the 'Yellow Emperor,' who is believed to have ruled China from 2697 to 2597 BCE. Historians and anthropologists do not agree on much of the Yellow Emperor's legend, but he is one of the mythical prehistoric emperors who supposedly created the basic elements of Chinese civilisation. The *Nei Jing* remains a medical classic of ancient Chinese civilisation and is still the foundation for the practice of meridian therapy today. (Kaptchuk, 2000; Mann, 1972)

Acupuncture is a therapeutic approach for balancing the flow and distribution of energy in the meridians of the body by natural methods. It has been used for thousands of years in Asia. A report in Science (1992) stated that a mummified man 5,000 years old (Ice Age) was found with tattoos

... acupuncture and meridian therapy have been helping people with their ailments and pain for many thousands of years without scientific endorsement; remember the energy of yin and yang... one can't dominate very long without change, and the other must then move to dominate ...'



corresponding to acupuncture points. This evidence suggests that a form of acupuncture may have originated in Eurasia at least 2,000 years earlier than previously thought. (Dorter et al, 1999)



We could get lost in this antiquity and that is why we have selected the time of the *Nei Jing*, as the written accounts of the history is relatively consistent from that period. Kaptchuk frankly admits: '*The Nei Jing, written in archaic language, is often unclear and inconsistent, and can only be understood after much preparation.*'

Meridian therapy known today as acupuncture or *Traditional Chinese Medicine* (TCM) has been the basis of health treatment for at least one billion people around the world for the last century. Acupuncture was a name the French gave for this Chinese therapeutic system; a better name would have been *Meridian Therapy* rather than acupuncture because acupuncture only describes one method used in this holistic health system.

Traditional Chinese Medicine (TCM) is the most popular form of acupuncture that is practiced in the West and was invented at the time of the Cultural Revolution (circa 1949) in the *People's Republic of China*. Chairman Mao was skeptical about acupuncture and wanted to blend the identity of Chinese medicine with the rapidly evolving trend toward biomedicine in the modern world. This resulted in TCM being more focused on organ function rather than meridian and/or Qi disruption, and a system more allied to modern biomedicine.

These methods are more easily taught in classroom settings and rely on maps and measurement, with point combinations and recipes used for treatment related to specific syndromes. It is more reliant on the conceptualisation of symptom patterns related to Western pathologies and less concerned with the evaluation of channels and their constriction through touch. Kaptchuk (2000) notes that "*Channel*" is in fact a better translation of *jing-luo* than "*Meridian.*" The word *channel* is closer to the Chinese, suggesting a three-dimensional conduit that contains some kind of substance, while *Meridian* implies only a two-dimensional grid.' Ju-Yi and Robertson (2007) note the paradoxical problems confronting practitioners of TCM that emerged from mid-20th century China.

'In the modern clinic there is often a cerebral approach to acupuncture point choice that fails to consider palpatory [myofascial] findings beyond the information provided by the pulse. At the same time, practitioners who are interested in finding ways to integrate palpated findings into their diagnosis often lack a useful theoretical structure to categorise what they are feeling.'

The earliest American medical journal reference the authors could find to acupuncture's use in human medicine was in 1836; however, European writers of the late 1600s had published on the subject as well. (Altman, 1998; Osler, 1893) Interestingly, Sir William Osler, who taught at Harvard and Yale and who gave the world its current residency system of medical education, wrote of acupuncture in 1892. The procedure did not make it into the *New England Journal of Medicine* until 1926, but these references were positive, indicating that acupuncture could be an appropriate and useful medical technique. (Gerber, 2000)

The procedure had been used for a great variety of illnesses, but it began to fall into obscurity in the 1940s in the United States as people turned to newly emerging, potent, increasingly ailment-specific antibiotics and pharmacology to treat their health problems. (Kaptchuk, 2000;

Rubik, 1995). In 1973, The *American Medical Association Council of Scientific Affairs* declared acupuncture an experimental medical procedure.

Chiropractic and TCM/Meridian therapy

Even though acupuncture had been used in seminars and chiropractic classes during the 1960's, (Goodheart, 1966) acupuncture was not officially recognised until 1975 by the *American Chiropractic Association*. The increased interest was due in no small part to the fact that James Reston, a member of Nixon's press corps in China, underwent an emergency appendectomy using acupuncture as an anaesthesia, which later was widely reported in the press. By 1983, the *American Osteopathic Association* endorsed the use of acupuncture as a part of medical practice.

Spinal manipulation also has a long tradition in Oriental medicine. Just as chiropractors have been affecting the balance of the meridians since its inception, acupuncturists have been using manipulation as well as myofascial palpation for millennia.

A review by Li & Zhong (1998) states:

'As opposed to Western medicine, some Chinese classic ancient books about the basic theory of TCM or manipulation are still regarded as very important books and will be found on a list of required readings for the student who wants to master the Chinese spinal manipulations; one notable example is *The Yellow Emperor's Classic of Medicine...*' (1995)

'The spinal manipulative book that has made a notable impact on the society of Chinese spinal manipulation is *Treatment of Soft Tissue Lesions*, (Feng, 1978) which looks at the integration of TCM and Western medicine and in which the rotatory manipulation is definitely advanced as application for the treatment of cervical spondylopathy, prolapse of lumbar intervertebral disc and related disorders of the spine.'

Feldman and Yamamoto (1974) note:

'...a substantial chiropractic and orthopedic approach to bone and muscle manipulation has developed in the Orient. This approach compliments and further extends the treatment of the meridians. Spinal adjustments and muscle relaxation, as well as the application of herbal plasters and compresses, are often utilised as aids in massage practice.'

There are many parallels between meridian therapy, applied kinesiology and the chiropractic profession. Not only has meridian therapy been utilising muscles for diagnostic information for millennia as well as manipulating and massaging muscles and joints (just as chiropractic has been affecting the meridians), but the philosophies of health parallel as well. Meridian therapy works to balance and release the '*life force*' within the body. Both are dedicated to prevention of disease rather than trying to treat symptoms. Both use natural approaches to work with the body rather than drugs and surgery. Medical doctors who have adopted acupuncture into their practices state that they are now practicing constructive medicine rather than destructive medicine. (Anderson, 2010)



Chinese medicine has long practiced and advocated joint manipulation

Astin (1998) suggests that large numbers of physicians are either referring to or practicing some of the well-known forms of CAM and that many physicians believe that these therapies are useful or efficacious. Acupuncture and chiropractic (43% and 40% respectively) are the most accepted of the complementary therapies within the biomedical community. Approximately 53% of these surveyed physicians believed in the efficacy of chiropractic, with 51% for acupuncture.

In fact there are an extensive number of chiropractic techniques that, following AK's urging and influence, incorporate acupuncture points and TCM principles. The *American Chiropractic Association's College of Chiropractic Acupuncture* reports that *Dynamic Chiropractic*, the most popular professional journal in the profession, polled 60,000 U.S. chiropractors and that over 80% are using acupuncture in some form. Acupuncture is now instructed as a post-graduate course through 75% of the chiropractic colleges, and it is board-approved in many states with the list growing every year, and several have incorporated acupuncture into their teaching curricula before the postgraduate level as well.

It should be remarked that large numbers of therapeutic systems around the world use some portion of AK's system of acupuncture diagnosis for their evaluation and treatment of the meridian system. (Touch for Health, 2012; Emotional Freedom Techniques, 2012; Thought Field Therapy, 2012; Neuro-Emotional Technique, 2012)

Utilisation of applied kinesiology to evaluate the meridian system gives the physician an opportunity to improve meridian function on purpose instead of by accident. Many times in the past chiropractors, osteopaths, physio- and massage-therapists have produced results in patients by improving balance in the meridian system. All along, the manipulative clinician thought they were releasing an impingement upon the spinal nerve root or muscular injury.

TCM is still not accepted by Western medical scientists. (Maciocia, 1989) Acupuncture, even though used for thousands of years, makes Western scientists uncomfortable due to the language and philosophical barrier. The fundamental force of TCM, Qi, is also an elusive, mysterious, '*can't quite be translated*' concept. Sometimes familiar words are used with radically different meanings, for instance acupuncturists may talk of '*taking the pulse*' but then may classify its characteristics using terms such as '*wiriness*' or '*slipperiness*', which are unrecognised in Western medicine. Similarly, TCM understanding of terms such as the '*Spleen*' and '*Circulation Sex*' is not confined to the organ itself, but rather relates to categories of physiological processes and psychosocial complexes that TCM associates with these organs: for example, the '*angry liver*', the '*anxious heart*', or the '*melancholy spleen*'. It is important not to interpret terms used in TCM too literally and to understand that they are sometimes used metaphorically or as a shorthand for signs, symptoms and syndromes that are not recognised (or not seen as of significance) in conventional Western biomedicine.

Western scientists want to get at what is really happening when acupuncture treatment gets results and describe this process in scientific language. The Western scientific method understands how the process operates when it can be broken down into elements that can be identified, named, measured and reproduced: electrical function, aerodynamics, laser, chemical compounds and substances whose size and shape can be calculated. The big question from the scientific world is why this can't be done with acupuncture ... or AK, for that matter. (Motyka & Yanuck, 1999)

Basics

Auspiciously for the health of the Western world, the concepts of East and West have been combined in *Applied Kinesiology*. The practice of *Applied Kinesiology* includes meridian therapy and a number of additional Eastern concepts. In the application of AK methods the vast muscular system of the body is used as a measure of meridian response and function. *Applied kinesiology*

has now given the Western scientist important and useful information: a method of measuring the effects of meridian energy upon muscular function. This paper illustrates and encompasses nearly fifty years of research and application of scientific principles to demonstrate the efficiency and validity of AK muscle testing. The association of muscle strength with organ or gland function in AK is enhanced as meridian system imbalance is found to correlate with specific MMT findings.

There are 14 main meridians in TCM, (Deadman, 2001) and 12 bilateral meridians in the body that the Chinese believe carry the life force, called Qi. (Mayor and Micozzi, 2011) These meridians are associated with specific organs and/or functions. The twelve associated with organs are lung, large intestine, heart, small intestine, circulation sex (pericardium), triple warmer, liver, gall bladder, kidney, bladder, spleen and stomach. The two meridians associated with function are the conception vessel and governing vessel. The meridians are evaluated in classic acupuncture for balanced energy. Ideally, the meridians have a good level of energy balanced equally among them.

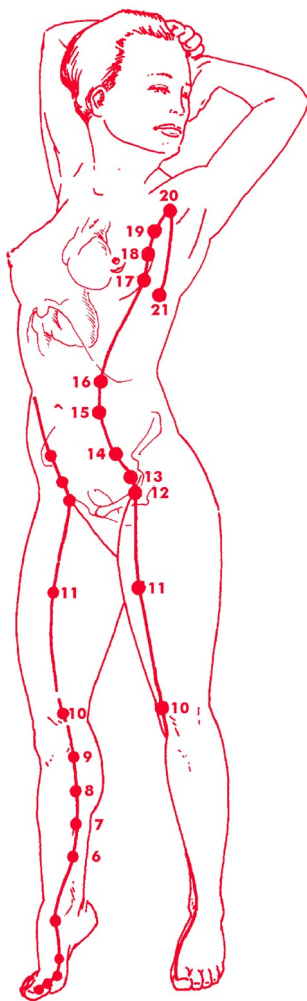


Table 1: Summary of the Twelve Primary Meridians

12 Meridians	6 Greater Meridians	Location
Heart	Upper shao yin (lesser yin)	Inside front of arm
Small Intestine	Upper tai yang (greater yang)	Inside back of arm
Bladder	Lower tai yang	Outside back of leg
Kidney	Lower shao yin	Inside front of leg
Circulation Sex	Upper jue yin (limit of yin)	Middle front of arm
Triple Warmer	Upper shao yang (lesser yang)	Middle back of arm
Gall Bladder	Lower shao yang	Middle back of leg
Liver	Lower jue yin	Middle front of leg
Lung	Upper tai yin (greater yin)	Outside of front arm
Large Intestine	Upper yang ming	Inside back of arm
Stomach	Lower yang ming	Inside front of leg
Spleen	Lower tai yin	Outside front leg

With kind permission, ICAK-USA

Applied Kinesiology

The practitioner evaluates for imbalances of the energy patterns of the meridian system, to which he or she attributes the cause of disease. (Maciocia, 1989) When imbalance is found, the practitioner stimulates various acupuncture channels and areas with a needle or through other methods to restore balance to the system. (Mayor and Micozzi, 2011)

An unequal measure of Qi within the acupuncture meridian system can be responsible for specific muscles testing weak. Correcting this unequal measure of subtle force within the meridian

system returns weak or hypertonic muscles to normal. Initially, diagnosis and treatment to the meridian system were standard acupuncture techniques. There have been several meridian examination and treatment techniques uniquely developed in applied kinesiology. In AK it is suggested that it is possible to correlate the rebalancing of Qi with the restoration of muscle strength (as seen by MMT) after making the appropriate interventions. This has been corroborated in many of the studies discussed in this paper.

AK practitioners employ acupoints and TCM theory in several fundamental ways:

- ▶ As one of the 5-Factors of the IVF in relation to specific muscle inhibitions as revealed by T-S Line analysis or MMT examination.
- ▶ As a way to prioritise and improve organ-meridian function through 5-Element and 24-Hour Qi system relationships.
- ▶ As entry points for investigation of therapeutic nutrients and remedies.
- ▶ Pain control.
- ▶ Emotional balance.
- ▶ Neuro-endocrine function. (Walther, 2000)

The following is a standard AK protocol to evaluate a meridian's relationship to an inhibited muscle:

1. Patient TLs pulse points to identify which combination of meridians strengthen the inhibited muscle(s).
2. Patient TLs Alarm points that correlate with positive pulse points, one at a time, to identify which strengthens inhibited muscle. Use 5-Element Law (Sheng and Ko cycle) and Horary chart to determine related Luo or Command points.
 - Appropriate acupoint can be stimulated by various effective methods.
3. Treat neurolymphatic and/or neurovascular reflexes on deficient meridian (related to inhibited muscle).
4. Test for related nutrients and spinal subluxation/fixation at associated point (and its Lovett reactor) of excessive meridian (related to positive alarm point).
5. If muscle strengthens to its own alarm point (esp. if patient has persistent pain), this indicates a priority deficient meridian; then treat alarm point, Lovett reactor, and tonification point of the meridian related to that muscle.
6. There is usually an upper cervical and or occipital subluxation or diaphragm muscle dysfunction when 5 or more Alarm points TL.
7. Provocative methods (breath cessation, eyes-into- distortion, correcting dehydration with water, testing patient in gait position, or correction of neurological disorganisation (switching), may be required to uncover hidden TCM factors. (Leaf, 2010; Walther, 2000)



AK Meridian Therapy

How to diagnose meridian involvement

Pulse point and MMT
Alarm point and MMT
Thermal palpation

24 hour clock as an indicator by time of involvement

5 Element Theory –
Characteristics of the symptoms, e.g. sound, climate, taste, etc.
Tracing hidden problems.

Patient may complain of bizarre symptoms that make no sense to the doctor **until correlated with meridian system.**

- 24 hour circulation of energy helps give indication for the cause of problems which recur at the same time each day.
- 5 element theory evaluation may uncover an involvement which is not easily found otherwise.
- Always use these diagnostic factors in problem cases.

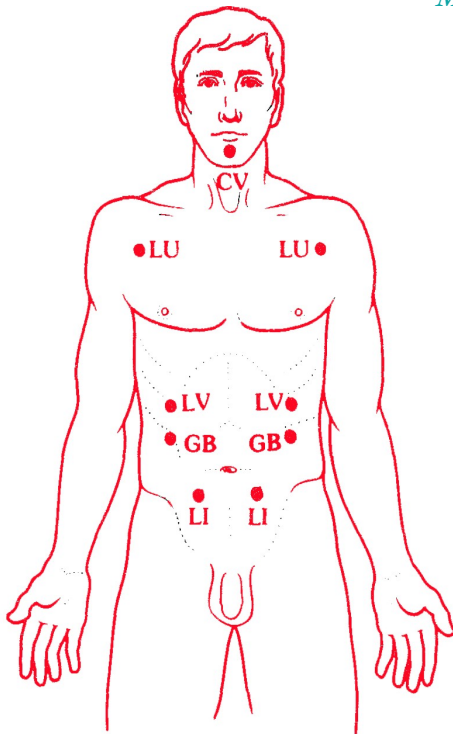
Continued Diagnostic Use

Meridian evaluation is an excellent monitoring tool of how the health treatments are progressing. Much meridian involvement is automatically corrected as the structural-chemical-psychosocial balances are remedied, e.g. correcting vertebral subluxations frequently balances active meridian associated points. As the constitutional homeostatic mechanisms improve, the meridian system improves its balance and strength.

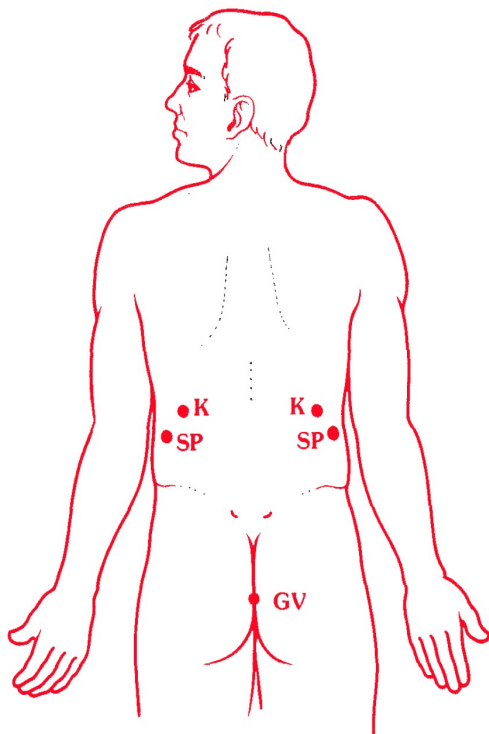
With AK, continue to evaluate the meridian system to monitor all phases of treatment.

AK Memory Keys for Alarm and Pulse Points

Mu or Alarm Points



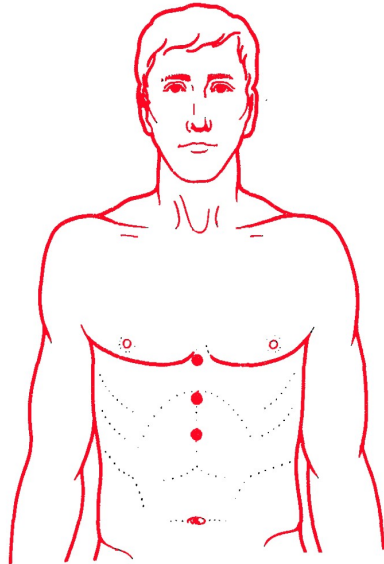
The alarm points for the lung, liver, gall bladder, and large intestine are basically over the respective organs.



The kidney and spleen alarm points are on the posterolateral aspect.

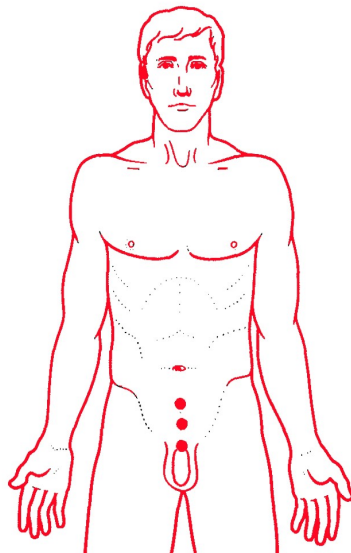
All other alarm points are on the conception vessel meridian; you can memorize them with the following memory keys.

The three upper grouped alarm points on the conception vessel are: CX, H, and S. You can remember **“Circulate Heart Strong.”**



- CX** — **C**irculate
- H** — **H**eart
- S** — **S**trong

You can easily remember the three lower grouped alarm points by thinking they have been treated by moxabustion; there would be **“three small blisters”** in these areas.



MOXABUSTION

- T** — **T**hree
- SI** — **S**mall
- B** — **B**listers

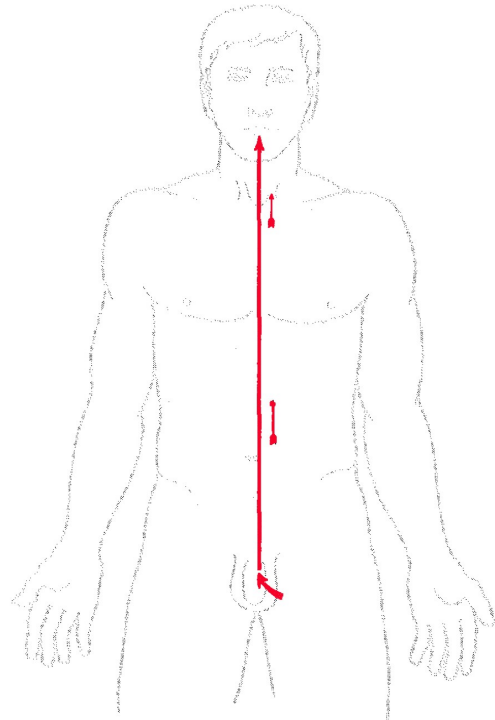
Conception Vessel Governing Vessel

Conception Vessel

In classic acupuncture the conception vessel starts with CV1 at the perineum and ends with CV24 on the lower lip.

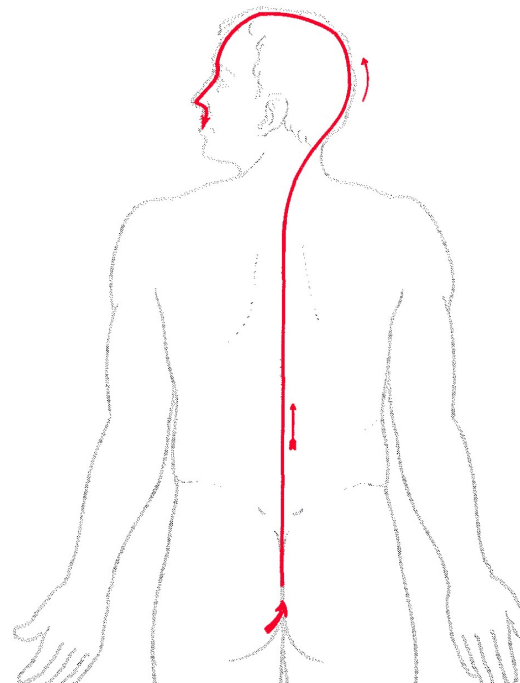
In applied kinesiology it has been found that running the meridian in reverse (high number to low number) usually causes tonification. Running the meridian forward (low number to high number) causes sedation.

The arrows in this picture are in the direction of classic acupuncture. To tonify, you would run opposite the direction of the arrows.

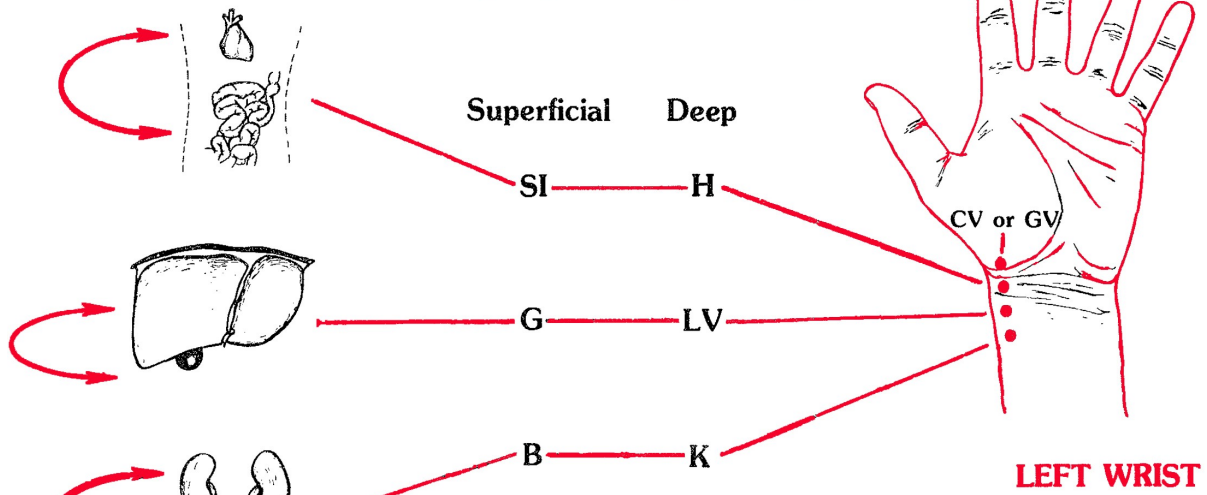


Governing Vessel

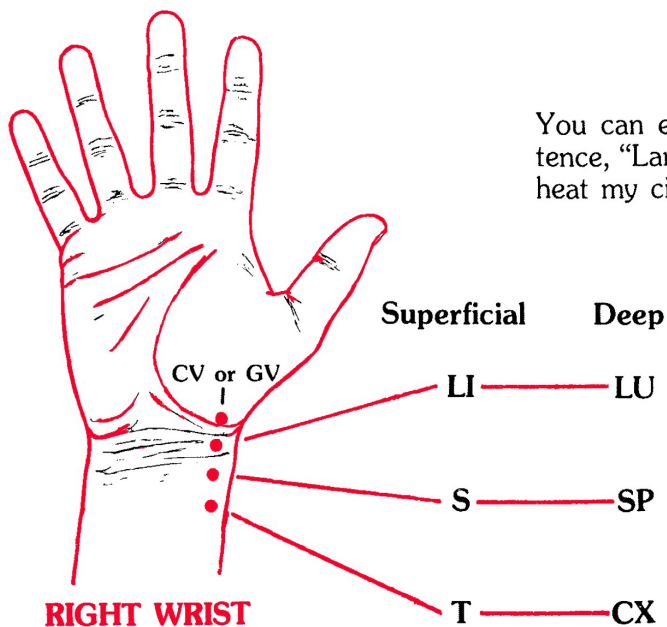
The governing vessel begins with GV1 on the coccyx and ends at GV28 on the gingiva just above the medial incisors.



Memory Keys for Pulse Points



Visualize the pulse points on the left wrist by mentally imaging the above pictures. The organs are in the same order as in the body; however, to determine superficial or deep pulses, reverse the organ position as indicated by the arrows. Thus, SI is superficial and H is deep.



You can easily memorize these points with the sentence, "Large lungs over the stomach and spleen triple heat my circulation sex."

Large Lungs
(LI) (LU)
over the
Stomach & Spleen
(S) (SP)
Triple Heat my Circulation Sex
(T) (CX)

AK expedites treatment options for active alarm points

In order to screen the body for causal issues, the AK TL process to the alarm points can be taken one step further. The positive alarm point (whether deficient or excessive), can be evaluated using structural, mental-emotional, reflex, nutritional, herbal, homeopathic, flower essence, or other potentially helpful remedies as challenges.

The following is a simple way to conduct an Alarm point investigation:

1. Patient TLs positive Alarm point with at least two fingers.
2. This TL will elicit weakness of a previously normal indicator muscle. In other words the alarm point that created strength in the original inhibited muscle will now create inhibition in a separate intact indicator muscle using TL.
3. Diagnostic and/or therapeutic substances can now be screened for strengthening the indicator muscle.
 - Test remedies for underlying etiological issues causing an active alarm point such as allergy, bacteria, virus, fungus, parasites, toxic metals, chemicals, radiation and unhealthy electro- magnetic fields, including negative emotions.
 - Test nutrients, herbs, and/or homeopathics that are supportive of the related meridians if needed.
4. Remedies discovered in this way will be supportive to lasting organ/meridian and structural correction

There are numerous advantages to this procedure. The positive Alarm point often relates to an excess meridian whose related muscle will not usually be inhibited. A normal indicator muscle allows the practitioner to directly investigate the excess meridian by TL to the Alarm point. Alarm points are well accepted diagnostic acupoints in TCM as they are the surfacing and collecting point for Qi of the underlying related organ. (Maciocia, 1989) In other words they are direct windows into their related organ. As Pischinger states, acupoints are conveniently hardwired to the connective tissue matrix, lymph, blood, and nervous systems via Heine cylinders. (Finando & Finando, 2011; Stark, 2002) These sensory organs depolarize to any stimulus, including touch. This implies potential access to clinical information from all of the major human regulatory and communication systems.

Alarm, Back Shu, and Source Points with MMT

Precise finger placement for Alarm point TL is important. Sometimes it can be very difficult, due to body composition and rib shape, to reach some Alarm points for TL. For example the SP Alarm point, LV 13 (Zhangmen), is located on the posterior-inferior end of the 11th rib. Fortunately, the 12 Associated points (Back Shu points) and Source points can be used in the same fashion and are easy to find.

As with the Front Mu (Alarm) points, the Qi of the Zang-Fu (Yin-Yang) organs also surfaces and collects at the Back Shu points. Thus, like Mu points, Shu points are usually tender to palpation and may have spontaneous pain when there is imbalance in the associated organs. For both Mu and Shu points, tenderness with light palpation indicates deficient organ/meridian function (Yin condition), and tenderness on deep palpation indicates excess organ/meridian function (Yang condition). (Maciocia, 1989) For AK doctors a Yin condition might represent an opportunity to challenge the patient's body with ATP production factors. (e.g., CO₂ challenge) (Schmitt & McCord, 2005) Toxins, microbial infection, and stress-related emotional adaptations could be examples of Yang conditions that result, at least initially, in excess organ/meridian function.

Stimulation of Shu points, including spinal manipulation, has a general calming effect and is sedating to Yang imbalances. Shu points are considered better for chronic conditions. Conversely, Mu points are considered more with acute conditions of their related organ, and their stimulation has a more tonifying effect on the associated organ/meridian. (Maciocia, 1989)

Finally, in TCM these points are often used in combination which is usually based on a problem in a particular element or burner. SP and ST Shu are often treated together for digestive issues, for example, or for conditions in the upper burner (chest), HT and LU Shu points may be treated in tandem. For recurring or chronic pain areas in the spine, even after spinal adjustment, it is very helpful to thoroughly address the viscerosomatic relationships expressed through investigation and stimulation of the Shu points.

There are also 5 additional Shu (Associated) points:

- BL 17 Diaphragm at T7, very important as Goodheart felt the diaphragm was the pump which vitalised movement of Chi energy through its 24-Hour circulation. (Goodheart, 1998, 1975, 1966)
- BL 24 Sea of Energy (upper Lumbar)
- BL 26 Gate Origin (lower Lumbar)
- BL 29 Central Spine (sacrum)
- BL 30 White Circle (Anus), sometimes helpful with anal fissures, haemorrhoids.

Lastly, a helpful update has been reported by European AK authors regarding the traditional Alarm point for the CX meridian. Gerz recommends CX1 for Circulation and KI11 for Sex as opposed to the traditional CV17 for the CX meridian. (Gerz & Kannengeiser, 2005)

Applied Kinesiology more readily measures Qi

While the study of energy movement in the body has gone on for thousands of years in the Orient, recent discoveries in the West have added to these tools of diagnosis and treatment. It is because muscle testing interacts with the acupuncture meridian system that the usefulness of the applied kinesiology approach for acupuncture diagnosis is presented. How does this new tool enable us to broaden our understanding of the ancient art of Chinese diagnosis? What are the practical applications? TCM, as with any complete system, is large enough so that within itself it contains its own contradictions.

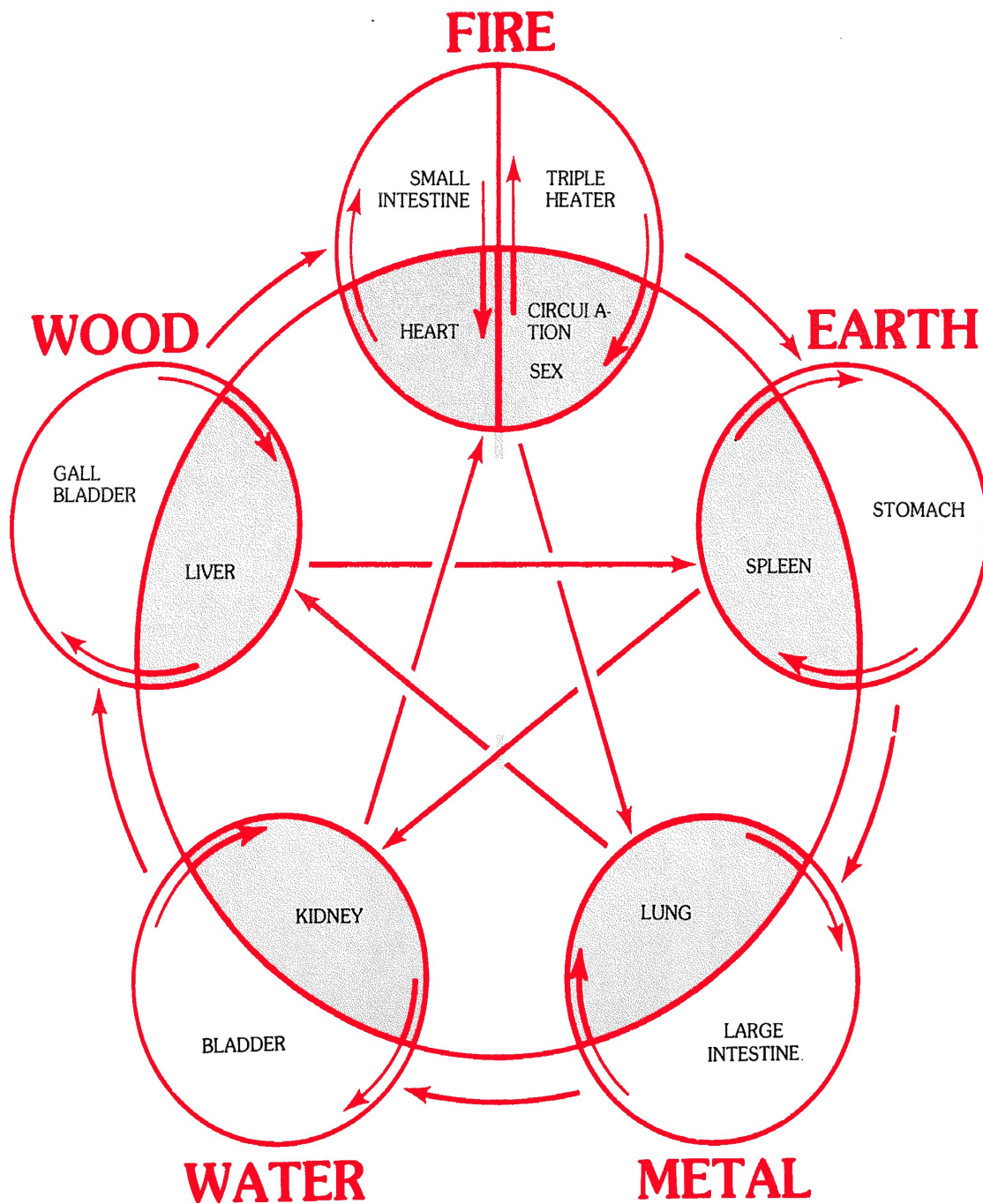
For an instance, often there is a reluctance to learn and use the 5-Element law in acupuncture practice due to the uncertainty which exists around pulse diagnosis. While pulse taking offers many of the body's secrets in TCM thinking, it takes years to become proficient in order to be able to hear those secrets. Long before the subtleties can be appreciated, however, the basic pulse at the wrist must be read. This informs the TCM clinician of a state of too much or too little energy, or the relative balance of energies in the body. This pulse diagnosis is done for each of the meridians.

Regarding pulse point technique, the current pulses were not introduced until the *Han Dynasty* in the great text the *Nan Jing*. Before this the pulses were taken at different acupoints with multiple points for each meridian. The newer pulse points are locations on the radial artery, not actual acupoints, where the pulses are palpated to determine their nature for diagnosis. (Amaro, 2012) Thus, some AK practitioners prefer to go directly to alarm points to determine which one strengthens an inhibited muscle if it has an acupuncture relationship. With basic knowledge of meridian dynamics this is still very rapid.

Another way to diagnose the meridian energies pulsing through the wrist is through the simple technique of muscle testing. Through systematic testing and comparison of individual muscles, the clinician who understands the positions of the pulse points at the wrist can estimate

the flow of Qi along separate meridians. MMT offers immediate feedback for the doctor and the patient so that one can already begin using the many complex approaches in TCM like the 5-Element law while, at the same time, learning pulse diagnosis. This method of incorporating the complexities of TCM into the contemporary practitioner's use of CAM is now common. (Larson, 1985)

5 Element Theory



Both MMT and reading the pulses are informative to the practitioner; in addition the MMT involves the patient experiencing TCM/meridian therapy in a new way. This more active participation allows the patient to feel the response as clearly as the practitioner. When there is imbalance, it is instantly recognised by the patient; when they are in balance, the improved strength on testing the pulses is obvious to the patient as well. This experience leads them to a deeper awareness of their body's relationship to TCM disorders and diagnostic tests.

Muscle testing offers a simple tool to read the energetic from the physical. In reading the pulses with the MMT, the current energetic and meridian state of the organism is reported, only in a new form. The pattern of muscle-organ/gland association of the meridians often parallel the relation previously noted with Chapman's and Bennett's reflexes, thus enhancing all of the viscerosomatic relationships. This, along with many associated clinical observations, established the muscle-organ/gland association of applied kinesiology. The discovery of the relationship between meridians and meridian points to muscles and muscle groups and their shared visceral connections serve to further support the muscle-organ correlations developed in AK. (Gerz & Kannengeiber, 2005; Garten, 2002; Walther, 2000; Dale, 1993; Corneal & Dick, 1987; Larson, 1985; Omura, 1981, 1979).

Muscle testing has another special feature to bring to the acupuncture field. Out of all the recent refinements (electro-acupuncture, laser acupuncture, computer diagnosis, etc.), MMT is unique in that it requires no electricity or instruments. This offers simplicity in the office, and ease when away from it. Muscle testing for this reason has become a normal part of many acupuncturists practice. (Moncayo & Moncayo, 2009; Gerz, 2005; Dale, 1999; Larson, 1985; Omura, 1981) Classical TCM theory recognises about 365 acupuncture points on the surface meridians of the body ... this may be another reason that the AK approach can expedite the determination of which of these points require treatment.

The six principal clinical methods of diagnosing an aberrant acupuncture point are the following: (Dale, 1999)

1. Tenderness and response to palpation (traditional TCM)
2. Observation of changes in skin color or texture (traditional TCM)
3. Significant change in the electro-permeability of the acupuncture point (Voll, Nakatani, Motoyama)
4. A sudden increase in vascular response at the radial artery when the acupuncture point is aroused (Nogier's vascular-autonomic signal)
5. A significant alteration of muscle testing strength when an acupuncture point is therapy localized, that is, touched (applied kinesiology's approach), and
6. The bi-digital O-Ring test, a scientifically investigated variation of the AK MMT, specifically employing the opponens pollicis muscle (Omura, 1981)

Applied Kinesiology and TCM/Meridian Therapy

Applied Kinesiology is now approaching its 60th birthday and is one of the most fortunate discoveries of a relatively young chiropractic profession. Moreover, everything about AK can seem excessively simple: its speed, application, accuracy and astonishing clinical results. Nothing even remotely like it had been seen before in the science of chiropractic.

Goodheart introduced meridian therapy into the AK syllabus and wider chiropractic profession in 1966, (Goodheart, 1966) after noting that imbalances in the meridians could influence the function of the muscular system. Many principles and philosophies from TCM were then added to AK, and AK approaches were added to TCM diagnosis and management, to complement the existing procedures. (Green & Gin, 1997; Goodheart, 1966) It is important to

note that Goodheart incorporated concepts from TCM that were most important to the AK paradigm and chiropractic profession. For example methods of point stimulation such as acupressure, teishin and manual tapping, are promoted instead of needling techniques.

Muscle testing = Body language
Body Language = Innate intelligence
Muscle testing = Innate intelligence

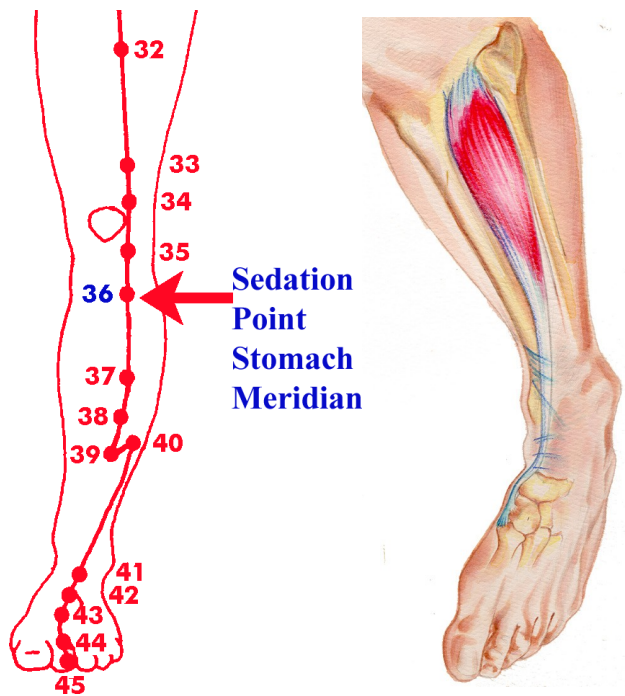
Medical scholars of the western world believed chiropractic to be little more than a simple biomechanical application with an instinctive (or placebo and ideomotor) action. However, the work of Goodheart continued to grow over the next 60 years with astounding results to become one of the most used diagnostic techniques in alternative medicine. If the clinical results remained genuine, theories accepted by the most distinguished and established medical authorities would have to be questioned or discarded. After all, chiropractic is just gaining some recognition of legitimacy in the scientific world after 128 years of clinical history and efficiency.

“The healer within can be approached from without.”
~ George J. Goodheart, Jr.

Controlled clinical trials have discovered that, when a muscle is weak, it can sometimes be strengthened by stimulating the classic acupuncture tonification point for a certain meridian. (Moncayo & Moncayo, 2009) If the muscle is hypertonic, stimulating the sedation point of the same meridian will bring the muscle back to normal.

Costa and Araujo (2008) showed that stimulation of the sedation point for the Bladder meridian (acupuncture point Stomach-36) induced decreased strength in the tibialis anterior muscle as measured by electromyography. The tibialis anterior muscle corresponds to the Bladder meridian in AK.

Sedation point for stomach meridian and MMT for the associated tibialis anterior muscle





The most interesting correlation is that the meridian which affects a specific muscle also affects the organ or gland with which applied kinesiology had independently correlated the muscle. For example, when an individual has a chest cold or some other involvement with the lung, there will be a weakness or hypertonicity of the deltoid muscle. The meridian that influences deltoid strength or weakness is the lung meridian. This same parallel is present throughout the system. However it was necessary to discover the meridian association for certain muscles, organs, and glands, as there is no meridian specifically correlated with them in classic acupuncture. An example of this is the adrenal gland, which is often found to correlate with the circulation-sex meridian. Chinese medical theory does not have the concept of the nervous nor endocrine systems, yet it effectively treats what are called neurological and endocrine disorders in the West. (Kaptchuk, 2000)

There are many methods in classical acupuncture for evaluating the energy pattern of the meridian system. These diagnostic methods have been greatly enhanced by the utilization of manual muscle testing to evaluate meridian patterns.

When two or more meridians are involved

First – Time saving evaluations

Diaphragm

Because the diaphragm is a mobilize of meridian energy, it should be evaluated first whenever there is a significant imbalance in the meridian system or if there is a general low level of energy in the meridian system.

- Low level of energy in the meridian system can be observed if a pulse or alarm point which does not therapy localize becomes positive to TL with cessation of breathing. Also if a strong indicator weakens with lead over CV24 and/or GV27, there is indication of low energy in the meridian system.

Occiput – Upper Cervicals

Frequently involved when 6 or more meridians are imbalanced. Correction of the subluxation, fixation, or other joint dysfunction in the upper neck and cranial base will greatly diminish or eliminate the meridian imbalance.

When one meridian is involved

Observe and therapy localize along meridian for mechanical blockage such as scars, recent trauma, chronic structural strain, changes in skin tone, color or moisture, and articular misalignment.

- Mechanisms to bring energy through blockage:
 1. **Structural corrections.**
 2. **Point-to-point stimulation with directional flow of the meridian.**
 3. **Massage or percuss through scar tissue. Vitamin E ointment may help to soften the scars found.**
- Evaluate the need of vertebral adjustment at the level of the associated point for the meridian involved.
- Evaluate and correct, if needed, the tonification and sedation points.

AK treatment considerations

Potentially, any weak muscle may TL to a KI or Spleen(SP)/Pancreas alarm point if the weakness has a component of Qi deficiency. A few common MMT and traditional TCM scenarios, for example, are listed below:

- ▶ Weakness of the sartorius and/or gracilis (adrenal-related muscles) strengthen on TL to the KI or SP/Pancreas alarm point.
 - Patient may be in adrenal maladaptation and may require long-term tonification of KI and/or SP/Pancreas meridian(s).
- ▶ Weak lower or middle trapezius (spleen- related muscles) TL to KI alarm point.
 - Patient needs KI Yang tonification to properly supply yang energy to the SP/ Pancreas to warm the digestive fire.
- ▶ Weak psoas (kidney-related muscles) TLs to SP/Pancreas alarm point.

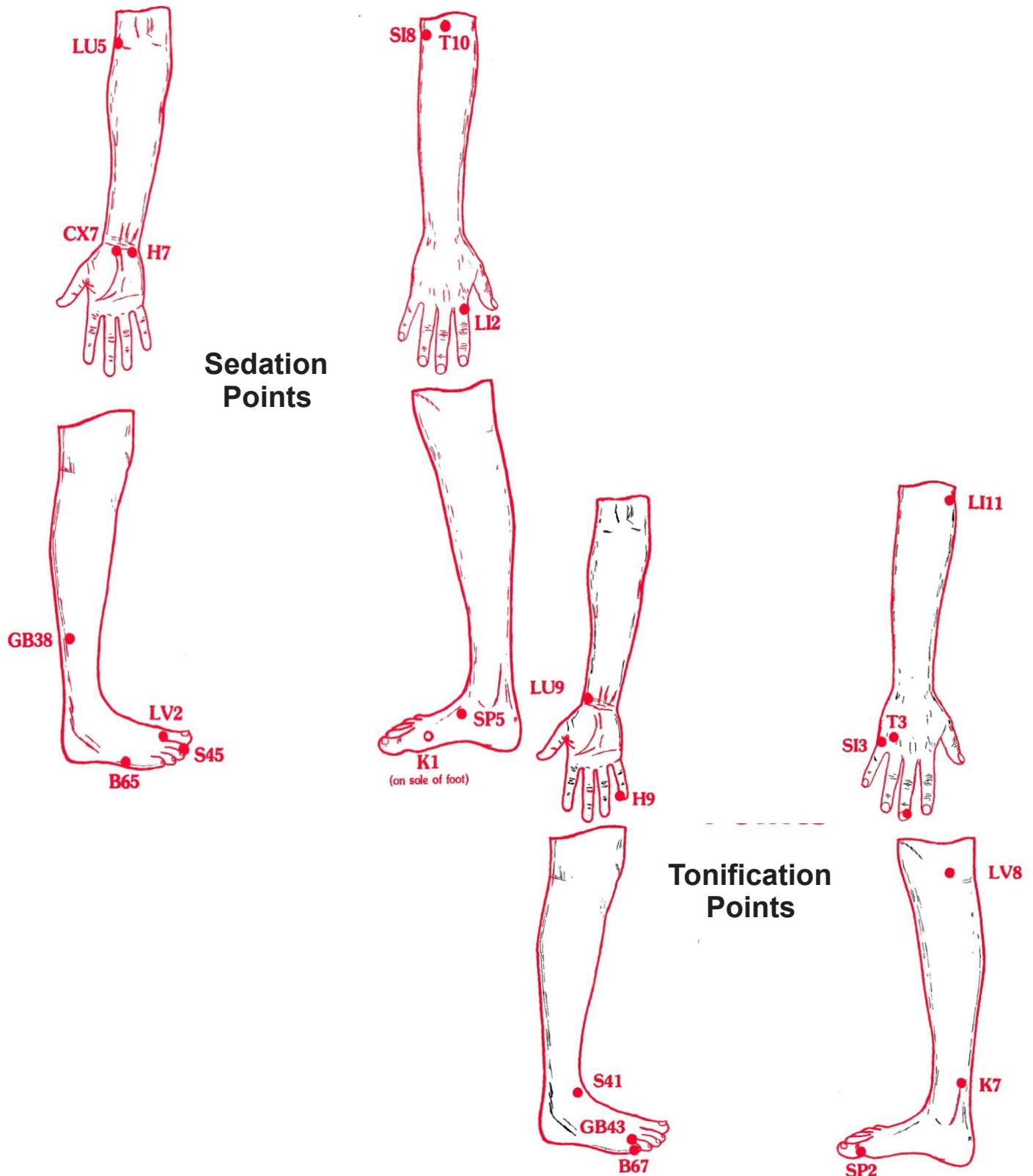
Patient may be overworked, overstressed, and in need of downtime to recover; SP/Pancreas tonification may be required to help refill KI Essence.

Except in the case of active infection, TCM regards KI Qi imbalance to be only of the deficient type. Therefore most KI tonification herbals (or other indicated nutrients) are recommended for a period of six months to two years. This is due to the extensive nature of the Qi exhaustion as the body will tend to display KI Yin or Yang deficiency only with significant depletion of the energy reservoir. An abbreviated symptom list for KI Yin, KI Yang, and SP/ Pancreas deficiencies is as follows:

- KI Yin deficiency - Dry mouth at night, night sweats, redness of the tongue with absent or partially peeled (geographic) tongue coating; deep tongue cracks, low back pain, knee weakness, lassitude, vertigo, ringing in the ears, thirst, flushed cheeks, mental irritability, afternoon fever, nocturnal emissions, concentrated yellow or dark urine, constipation.
- ▶ KI Yang deficiency - Abundant, dilute urination; coldness in the low back; tongue is pale or pale and blue-purple with a white coat; pallor, cold extremities; weak, sore lumbar spine and

knees, nocturnal urination; impotence, erectile dysfunction, premature ejaculation in men, infertility in women; dizziness, ringing in the ears, apathy, lack of will power.

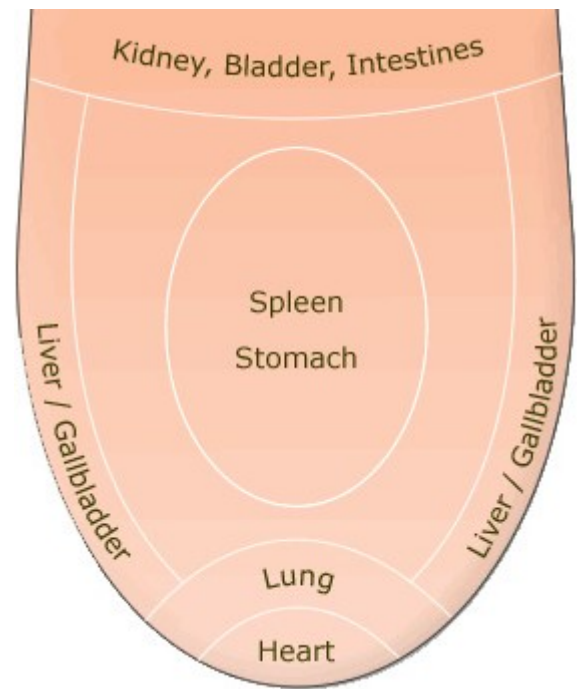
- ▶ SP/Pancreas Deficiency - Decreased or no appetite, fatigue, loose stools; hypochlorhydria and/or pancreatic enzyme deficiency, food allergy, easily chilled, cold extremities; stomach, uterus, anus, or vagina prolapse; limb numbness or tingling, hypochondriac pain. (Stark, 2002)



Tongue diagnosis

AK doctors can benefit from another icon of TCM diagnosis. TCM practitioners are usually well trained in tongue diagnosis. In addition to pulse points it is one of the primary diagnostic methods of TCM. The appearance of the tongue gives solid diagnostic information about many organs and meridians based on its color, size, coating, cracks, teeth impressions, movement, posture, and presence of red points. This is especially helpful in determining patterns of excess, deficiency, and priority. The author of this section (BS) has found that patients are highly intrigued when the doctor connects physical signs on the tongue with their MMT patterns. (Maciocia, 1989)

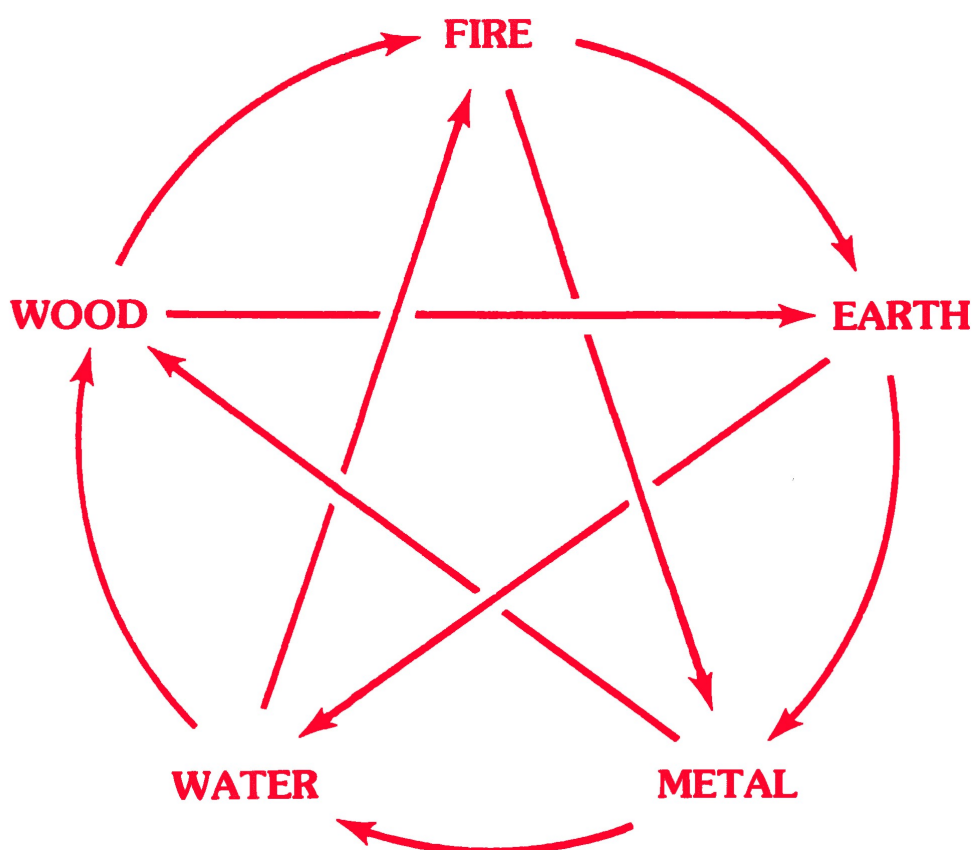
There are aspects of basic tongue diagnosis summarized below that are instantly discernible by any knowledgeable practitioner (main MMT indicators given in parentheses). Some conversion of common TCM language has been done to simplify and relate these concepts for AK practice:



1. The root area at the rear represents the intestines (tensor fascia lata, quadriceps, and abdominals).
 - ▶ Some “dirty” phlegm coating is normal here.
2. The middle portion or body mainly shows Stomach/Pancreas signs (pectoralis-major, clavicular division, tensor fascia lata, and latissimus dorsi).
 - a. If excess sticky coating also covers this area it is sign of too much dampness, especially in the digestive system, which is allowed by hypochlorhydria and/or low pancreatic enzymes.
 - i. SP Wi or Yang deficiency or cold SP in TCM terms.
 - ii. If coating is thick, yellow, or brownish then suspect significant intestinal dysbiosis as well.
 - iii. Sometimes almost entire tongue surface will have thick phlegm coating which is a sign of hypochlorhydria and/or low pancreatic enzyme production, poor diet, and severe dysbiosis.
 - b. Impressions of teeth on tongue sides also means weak pancreas/stomach function (swollen tongue)
 - i. Usual finding of LV (Wood) overacting on pancreas/stomach (Earth) via Ko cycle, especially if tongue sides are red. In TCM this is the fundamental pattern underlying almost all digestive problems and is always a priority no matter what the patients’ presenting symptoms may be.
 - c. Transverse cracks on sides of tongue show severe chronic spleen deficiency.
 - d. Concave red points toward sides but on tongue body is another sign of stomach/pancreas deficiency and immaturity (very common in young children).
 - e. Overall paleness indicates significant Qi and/ or Blood deficiency (especially pancreas/stomach and Yang Qi).

- f. Purplish or bluish undertone shows blood stagnation especially from LV congestion (PMS, rhomboid) or lack of adequate Yang (pancreas/stomach related muscles and right psoas) to invigorate blood circulation.
 - g. A crack in the centreline, often deep, reveals KI Yin deficiency (usually left psoas) which can be inherited or acquired, either way it is a priority and expect to hamper Kidneys over the long term.
 - h. Wide centreline crack not to tip or root relates to ST Yin deficiency (PMC, supinator, pronator) probably caused by deficient KI Yin and/or microbial heat in ST (i.e. helicobacter pylori).
3. The right edge is related to gallbladder (popliteus).
 - a. redness here means GB heat.
 4. The left edge is related to liver (PMS, rhomboids).
 - a. redness here means LV heat (excess yang) and/or LV Yin deficiency.
 - b. orange tone relates to severe LV blood (nutrient) deficiency.
 5. The area just behind the tip relates to the lung (deltoids, coracobrachialis).
 - a. cracks or coating loose or peeled off is LU Yin and/or Qi deficiency.
 - b. excess coating indicates phlegm/mucous excess in the LU.
 - i. can relate to acute or chronic lung membrane dysbiosis.
 6. The tongue tip relates to the heart (subscapularis).
 - a. tip redness and/or rolled upward posture relates to HT Yin deficiency or Yang excess, heat in HT.
 - i. usually either emotional excess, LV Yang insulting HT via Sheng cycle disharmony, or KI Yang excess overacting on HT via Ko cycle.
 - b. thinner crack from root to tip indicates constitutional tendency to HT problems and HT Yin deficiency.
 7. Overall tongue colour should be pink and not the following:
 - a. red – Heat.
 - b. reddish purple – blood stagnation from Heat.
 - c. bluish purple – blood stagnation from Cold .
 - d. pale – decreased SP Qi and/or decreased Blood
 - e. white – severe decreased SP Qi and/or decreased Blood
 - f. above abnormal colours can occur in a specific tongue organ area and relate to an abnormality in that organ.
 8. Tongue coating should be thin and white and attached to surface.
 - a. loose or peeled off in patches ('geographic' tongue) indicates Yin deficiency (usually KI, esp. left psoas), and likely malabsorption issues with the usual food sensitivity triggers, especially gluten.
 - b. a single peeled area corresponds to Yin deficiency of the organ for that area.
 9. A swollen area corresponds to Phlegm in the burner of the organ for that area (i.e. LU area = Upper Burner)
 10. Convex red points result from excess/heat condition, like infection, and may be found in any tongue area...suspect heat condition in organ/ meridian for that area. (Maciocia, 1989)

Creation Cycle and Destruction (KO) Cycle



CREATION CYCLE

Fire creates earth by leaving ash.
Earth creates metal by ores.
Metal creates water by melting.
Water creates wood by nourishing plants.
Wood creates fire by burning.

DESTRUCTION (KO) CYCLE

Fire destroys metal by melting it.
Metal destroys wood by cutting it (saw).
Wood destroys earth by covering it.
Earth destroys water by damming it.
Water destroys fire by putting it out.

The Bi-Digital O-Ring test (BDORT) of Yoshiaki Omura

In the late 1970's Yoshiaki Omura (a medical doctor and electrical engineer) developed a method of TCM assessment (using the AK approaches of MMT and TL) that have been utilised in Western medicine, dentistry, veterinary and Oriental medicine. (BDORT, 2012; Shinnick, 1996; Omura, 1981) Dr. Omura visited Goodheart in his office in the 1980s and observed him. (Schmitt, personal communication) Omura has 44 papers listed in PubMed regarding the effects of Qi and other subtle energy fields and acupuncture areas and points upon human function as measured by the MMT.

Omura noticed that when a slight pressure was applied to skin areas, often related to previous pain, that a decrease in grip strength was observed. Omura noticed that it was possible to test a subject's resistance to having their thumb and finger pried apart from one another when they held their fingers 'tip-to-tip', in opposition to each other. This is the characteristic *Bi-Digital O-Ring Test* (BDORT) for which this method is named. Omura expanded this observation by noting that a patient's O-ring strength could change during contact with various test substances, specific nutrients, chemicals, pathogens, toxins, etc. He also found that a patient's fingers could more

easily be pulled apart during his O-ring testing when the patient came in contact with unhealthful items. Conversely, when in contact with healthful items, the original finger strength would be maintained.

Following the work of Goodheart, Omura showed (1981) that when a patient touched their Alarm or Mu point of an organ while simultaneously holding a substance suspected to be toxic to that organ, the BDORT showed a weakening response.

In addition to many journal articles chronicling his observations regarding the BDORT and its usefulness for other diagnostic problems, Omura published two books in Spanish on the BDORT and one in Japanese. A synopsis has also been published of this method, by an electrical engineer who worked with Omura for 20 years. (Losco, 1991) Losco observes that *'The O-ring test is presently being used by many physicians around the world and it is being taught in some medical schools in Japan, Finland and Venezuela'*.

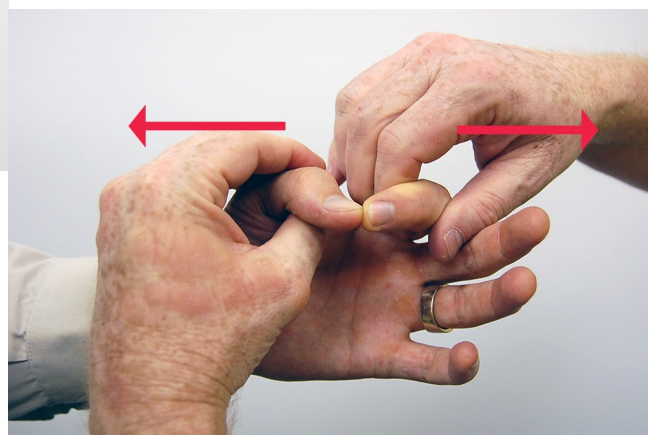
It is fascinating to discover the ripple effect of Goodheart's work extending so far in TCM, to encompass so many cultures and languages. Of course, the BDORT is only a small component of the vast collection of innovative AK methods now used by practitioners who use TCM. However, Omura's crediting Goodheart with his earliest innovations in this area of research is noteworthy.

Not only can muscle strength indicate when a meridian is out of balance, it can determine which therapeutic approach is correct for returning the system to balance. This is accomplished by stimulating a potentially appropriate meridian point with TL (or some other AK sensorimotor challenge) and observing whether the muscle returns to normal strength. If it does, the therapeutic trial was an effective measure; if not, another approach is obviously needed. With this method of evaluation, many new therapeutic approaches have been found for balancing the meridian system. Some of these do not utilize traditional methods of acupuncture treatment.

The contributions and new principles relating to AK and TCM have been used as a springboard for other techniques and systems including Scott Walker's *Neuro-Emotional Technique*, (2012) John Thie's *Touch for Health*, (2012) John Diamond's *Behavioral Kinesiology*, (2012, 1979) Roger Callahan's *Thought Field Therapy*, (2012) Gary Craig's *Emotional Freedom Techniques*, (2012) and Fred Gallo and Harry Vincenzi's *Energy Tapping*, (2008) among many others now established in the field of C.A.M..



During the BDORT the subject holds a non-conducting probe against the Triple Warmer Alarm point.



AK Outcomes Research in the treatment of TCM imbalances

Table 2: Partial list of applied kinesiology research related to TCM (Available from ICAK USA, 2012; ChiroACCESS, 2012)

Subject	Author/Year
Acu-Aids and sedation of muscles	Corneal & Dick, 1987
Acu-Aids	Hawkins, 1975
Akabane points	Cousineau, 1963
Antenna concept	Koffeman, 1975
Circulation Sex meridian and thiamine	Kane, 1994
Demagnetizing meridians	Gunn, 1979
5-Elements diagnosis and treatment	Thie, 1982
Governing and conception vessel alarm points	Sprieser, 2005
Governing and conception vessels and switching	Gerz, 2001
Governing vessel and reticular formation	Kharrazian, 2001
Governing vessel – 21 Centering the spine concepts	Schmitt, 1998
Interstitial cystitis and AK treatment	Sprieser, 2002
Intraosseous subluxation and alarm points	Duffy, 2004
Magnetic model of acupoints	Moon, 1989
Magnetic polarity of acupoints	Colum, 1981
Point application	Brimhall, 1988
Pulse point diagnosis in AK	Meldener, 1983
Pulse points and low back pain	Tooley, 2003
Smoking cessation, B & E technique	Durlacher, 2007
Then & Now Technique and vertigo	Sprieser, 2002
Therapy localization of acupoints	Deutsch, 1986
24-hour clock and shoulder pain	Shin, 2003
Voll – allergy diagnosis and treatment	de Monterice, 1980
Voll – AK and electroacupuncture	Hanicke, 1980
Tendino-muscular meridians and AK	Anderson, 1990

Myofascia based acupuncture: the anatomy and movement of Qi

Myofascia includes all the muscles as well as the thin connective tissue called fascia that covers the organs and tissues in the body and is found from the head to the feet and around the brain and other organs; it's found over the entire body. It basically connects the total body underneath the skin like a fascia bodysuit or wetsuit and when injury or bad habits affects this system many dysfunctions can occur within the structure as a whole, and to muscle physiology especially.

These interconnections in the myofascial system extend to the cellular level. Oschman (1987) states '*Cellular biologists have discovered that each cell in the body has its own myofascial system, consisting of a somewhat stiffened skeleton made of tubules interconnected with a fibrous ground substance, some parts of which are contractile.*' Ground substance is the matrix in which the cells and fibers of myofascial tissue, as well as all the other cells of the body, are embedded. (Pischinger, 2007)

This section explores a new understanding of the primary role that the body's myofascial system plays in the distribution of Qi throughout the body and acupuncture meridians. The better we understand the realities of TCM within the structure of our knowledge in the West, the more we can use TCM and contribute to it. All forms of healing; chiropractic, osteopathy, bodywork, surgery, acupuncture and more, are mediated through the myofascial tissues. (Paoletti, 2006; Goodheart, 1998-1964) Travell and Simons (1999) have linked myofascial distortions on the surface of the body to a great number of autonomic and visceral dysfunctions that are resolved when the myofascial impairment is corrected.

The human body retains a perfectly human appearance even when all of the body's systems are removed besides the myofascia. The same is true if one retains only the vascular or nervous system, as the myofascia provides the supportive and guiding structures for both of these systems. This shows us once again the interdependence of the myofascial system with the rest of the human body and how it is impossible to dissociate them.

Until we learn to move in ways that don't cause habitual restrictions in our myofascial tissues, we cannot move efficiently and therefore cannot run, dance or compete comfortably or elegantly. Proper manipulative treatment to release disturbances in the myofascia will open up many avenues of movement in martial arts practice. Martial arts, tai chi, and Qigong instructors explain this as structure and function in action, a Yin and Yang energy system, with Qi flowing through this myofascial matrix of the body. The West explains it more simply as healthy myofascial/ biomechanical interactions. (Finando & Finando, 2011) One of the best known Taoist masters teaching martial arts today, Mantak Chia, describing his Iron Shirt Qigong states:

'The fascia is extremely important in Iron Shirt. This tissue is the most pervasive in the body and is currently believed to be the means whereby Qi is distributed along acupuncture routes. Researchers in France have discovered that the least resistance to the flow of Qi occurs between the fascia and that when these routes have been charted they have been found to correspond to the classical acupuncture channels.'

Qigong is an important healing method in modern China and came to occupy a critical place in modern Chinese therapeutics, especially after Deng Xiaoping's rise to power in the 1980s. Basically, Qigong involves the cultivation of a '*mindful body*' or an '*embodied mind*' in order to improve movement, and the quality and quantity of Qi within a person. It is thought that Qi can be precisely manipulated by using meditation, exercise, visualisation based on traditional Chinese physiology, breathing and intention. (Kaptchuk, 2000)

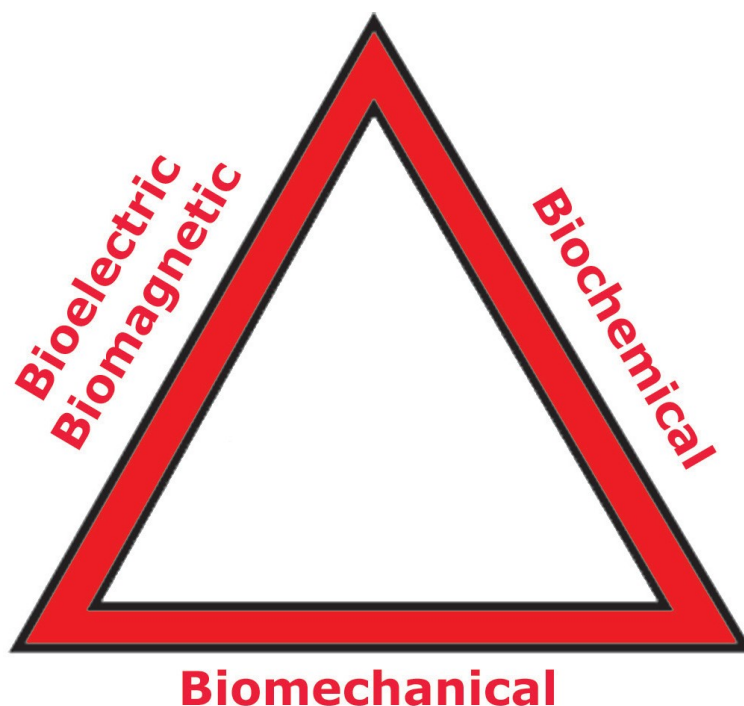
Other researchers have confirmed the close parallels between myofascial planes in the body and traditional acupuncture meridian channels. (Stecco, 2004) Langevin and Yandow (2002) found a strong correlation between acupuncture points and inter- or intra-muscular septa, along

myofascial planes. In their study, traditional acupuncture points were marked in the upper arm post-mortem. They then examined whether or not these points corresponded to connective tissue planes by examining ultrasonic cross sections. In the acupuncture points under scrutiny, over 80% corresponded to intra- or inter-muscular myofascial tissue planes.

Finando and Finando (2011) suggest that the mechanism of acupuncture stimulation is anatomical and related to myofascial continuities in the body. The places where the maximum stimulation of the myofascia may occur are the most effective areas and points for treatment in TCM in their view. Pischinger (2007) and Larson (1990) have previously suggested that myofascia is the basis of the multiple and varied effects of acupuncture treatment. Oschman, in Pischinger (2007) states '*acupuncture meridians are the main channels of the connective tissue matrix*'. (pg. xiii) The invisible and difficult to measure Qi, the source of energy and information in TCM for the organism, may consist of bioelectric, biomechanical, biochemical, and biomagnetic signals moving through myofascial layers, collagen fibres, ground substance, and associated layers of water molecules.

Myofascial tissue has the ability to generate and transmit electrical energy due to the way that the fibres and fibre bundles are arranged in parallel arrays. This gives the myofascial tissue a measure of crystallinity. The organic crystals of the myofascial system are composed of thin, long, flexible filaments which result in flexible crystals. Piezoelectricity is transmitted in this way, which is electricity resulting from pressure upon crystals. (Bassett, 1968) Bassett notes that voluntary and involuntary contraction of the muscles of the body (particularly of the antigravity muscles), and continuous cell motions produce the compression necessary for the body to produce electricity and electric fields. The possibility that electrical signals and charge could be generated by mechanical forces that may be propagated through the extracellular matrix was first proposed by Szent-Gyorgyi. (1941)

Accessible factors influencing meridian channels and Qi



Robert Fulford DO also theorised on the importance of myofascial tone and the movement of energy through the body, based on the findings of Robert Becker and the piezoelectric character of tissue.

'When a trauma, physical or emotional, takes place in the tissues or bone, a current of injury is created. This results in a depressed area in the tissue. The depression is known as a sink. The sink creates a blockage in the normal flow of the piezoelectric current.'

In acupuncture, it should be remembered that the term acupoint is a poor translation from the Chinese. The definition of a point in mathematics is '*a dimensionless geometric object having location but no property.*' The better meaning of the Chinese ideograph for acupuncture point is '*cavern*' or '*hole*', indicating that these points are not simply invisible dots placed along channels in the body but are actual openings into the energy system.

'It took a force of energy to create the trauma and blockage. In order to correct the blockage to the normal flow, it will require a quantum of energy of the same frequency as the current of injury, but will need a quantum of energy of greater intensity than the current of injury to release the sink. We have found that the percussion vibrator is the instrument of choice.' (Comeaux, 2002)

In North Korea during the early 1960s Kim Bonghan, PhD discovered what is now thought to be an extension of the basic meridian system. An article in the *Journal of Acupuncture Meridian Studies* helps explain the discovery of what are now called *Bonghan channels*, threadlike structures found on the surface of organs that are characterised by bundles of ducts that spread across the organ in a web-like manner.

These physiological structures may correlate to the acupuncture meridian pathways used by acupuncturists. (Lee & Soh, 2009; Shin et al., 2005) *Bonghan channels* may serve in the transmission to organs of granules that appear to contain DNA. The article, although technical, explains in detail several theories about the anatomical structures and how they may be an extension of what has been described by acupuncturists. Now, with the help of the *Department of Physics at Seoul National University*, an explanation for this 50-year ambiguity may come to light (Bonghan, 2009; Dorsher, 2009).

In the late 1970's, Robert Becker MD, an orthopedic surgeon, wrote *Body Electric and Cross Currents* (Becker, 1985). He and associates similarly identified lowered resistance values for over 50% of acupoints along the Large Intestine meridian. Becker suggested that the acupoints acted as amplifiers of a semi conducting Direct Current traveling along the perineural cells which wrap around each and every nerve in the body. The web-like structure of the myofascia and *Bonghan channels* may transport this Direct Current as well. This DC system became more negative as it traveled to the ends of fingers and toes and more positive as it returned to the trunk and head (i.e. Yin -Yang flow).

Becker's experiments and theorising could be regarded as a continuation of the similar work of Harold Saxton Burr. Becker thought, like Burr, that some sort of field encompassed the body, governing and stimulating regeneration. He found that an electrostatic field, positive away from the limb stump, could enable regeneration of a frog limb.

Becker ascribed regeneration capability to the existence of a nucleus in the salamander's erythrocyte. (The mature erythrocytes of frogs and higher animals lacked a nucleus.) Erythrocytes with nuclei seemed to have the capability required for later differentiating into the various cell types needed in the growth area. Becker described these studies in his 1985 book *The Body Electric*, and also (condensed and compared with other similar electro-energetic fields) in the first part of his follow up book *Cross Currents*. (1990)

Becker's newest and most efficient regeneration technique is based on iontophoresis: silver ions are pulled into a lesion area by means of a positive silver electrode placed upon the wound. This would create a regeneration, inducing blastema in human tissues that would otherwise have atrophied. Becker patented this procedure in 1998.

It was known that the skin acted as a battery (outside of skin is negative and inside positive) and Becker found the acupuncture point more positive than the surrounding skin and the insertion of a needle would short circuit this battery and generate a current of injury lasting for several days. It was found that further electrical activity occurred because of:

- i. Ionic reactivity between the metal needle and body fluids
- ii. Low frequency pulses of electricity from twirling the needle.

The investigations by Becker and associates found this generated electrical energy would flow along this DC system to the brain and would be analogous to the Qi energy described by classical acupuncture (Tennant, 2011).

Advantages of myofascial hypothesis

An advantage of conceiving the myofascial system as a complex communication network that transmits Qi throughout the body is that the myofascia is regarded as a '*metasystem*', connecting and influencing all other systems in the body. (Finando & Finando, 2011; Paoletti, 2006) The fact that the myofascial system may provide the anatomical basis of this metasystem in the treatment of imbalances of Qi is an important addition to TCM physiology. (Langevin, 2002; Larson, 1990)

Understanding that the superficial surface of the human body is an outward reflection of Qi and the internal physiological situation may result in an improved capacity to know the entire pattern the patient is experiencing. Once it is recognised that the structure of the body and the function of the myofascial system influences and is influenced by the channel flow of Qi, one realises that the MMT can reveal more information than previously supposed. The expanding construct validity and usefulness of the MMT (read more in Chapter 4, Cuthbert S et al, Applied Kinesiology Essentials, the missing link. [Available here](#)).

encompasses this growing understanding that meridian flow and muscular function correlate.

For this reason it may be useful for acupuncturists to learn AK, at least the MMT portion of this science. It would be beneficial for them to be comfortable and competent to work broadly with the assessment of myofascial tissue tone and strength throughout the body as such work will speed up and improve the healing process. This added diagnostic dimension would not abandon the acupuncture model; instead, it would involve working more efficiently and completely with it.

The myofascia also offers another physiological possibility for explaining the clinical phenomena and effects of acupuncture treatment. (Finando & Finando, 2011) As in the meridian theories of TCM, the myofascia is a connection between the surface and the viscera of the body. By treating the myofascia with precisely organised stimulations (the determination of which of the 365 traditional acupuncture points in the body to treat, significantly expedited by AK's TL system), (Moncayo & Moncayo, 2009; Walther, 2000; Shinnick, 1996; Goodheart, 1975, 1966) the myofascia provides a means for diagnosing and treating countless forms of human physiopathology through the treatment of the surface; like Qi, the myofascia is an organ that immediately responds to stimulation. (Paoletti, 2006) As with TCM, it has been shown that the effectiveness of myofascial therapy is linked to accurately localising dysfunctions of the myofascia and using an appropriate treatment to improve its function and activity.

These myofascial impairments and restrictions have been elegantly described and illustrated by Tom Myers in his book, *Anatomy Trains* (Myers, 2009). '*Myofascial meridians*' is a term used to explain these myofascial connectivities throughout the body, and it is possible that Qi flows

along these channels of myofascia as well. Myers' efficient bodywork system is recommended for further reading.

Nagahama (1956) and Motoyama (1988), well-known researchers in Japan, independently conclude from their own research and other contemporary TCM scientists that the meridian system lies in the myofascial tissues and specifically in the superficial myofascia. Nagahama has suggested that the terms '*connective tissue therapy*' be used to describe acupuncture.

Some of the principal ideas of acupuncture can now be conceived as the stimulation of an extraordinary sensory and motor organ, the myofascia, along pathways that have strong relationships to movement and the action of muscles (duplicated in precise manual muscle testing), and these provide efficient pathways to deeper aspects of the myofascia and the viscera. These modern ideas of contemporary acupuncture mirror AK ideas concerning myofascial tissue as the medium for internal pathophysiology which manifests themselves in the surface tissues of the body.

The importance of muscular function and TCM is seen in the work of Dr. Yoshio Manaka, who notes the relationship between Mu or Alarm Points and the function of the muscle in which the points are embedded. (Matsumoto & Birch, 1988) Alarm points are hypothesised to reflect the status of organs and meridians. Yet Manaka notes that often when a patient is lying down, the alarm points are not active, even when there is a problem in the related organ or meridian. However when the meridian or related myofascial channel is stretched by flexing, extending or rotating the hand or the foot, the point immediately becomes active. Larson (1990) suggests '*by moving the wrists and ankles in certain ways, the stretched fasciae achieve a level of tension and, therefore, a heightened conductivity. This, in turn, establishes a tension at the Mu point which makes it more reactive on palpation.*'

Manaka explains this in the TCM context: a patient with a symptomatic small intestine (diagnosed by symptom history and palpation of related acupuncture points), showed no soreness at CV-4 (the Mu or Alarm Point for the small intestine). However when the small intestine meridian was stretched (crossing the stomach and small intestine), CV-4 became reactive and tender. Matsumoto & Burch conclude '*... Mu points are points of specific attachment of the fasciae through which the meridians run.*'

This is the kind of sensorimotor challenge that is employed in most clinical encounters in the AK practice. (read more in Chapter 3, Cuthbert S, et al, Applied Kinesiology Essentials, the missing link. [Available here](#)) The MMT is conducted in the positions and under the circumstances; environmentally, physically, chemically, emotionally, wherein the patient experiences their problems.

It is said that in order to hide something adequately, you must put it in plain sight. What could be more in plain sight than the myofascial system, hidden beneath the *skinvelope*? For thousands of years the many secrets of the meridian system have been hidden in the myofascial envelope of the human body.

Neural theories of acupuncture: additional links between AK and TCM

Acupuncture not only garners the attention of the world as a vitalistic philosophy of health but also in terms of pain and pain control. It has been shown repeatedly that acupuncture is effective in treating pain; it works 70% to 85% of the time, far greater than the placebo, which only has about 30% efficiency. (Cherkin et al., 2009; Kaptchuk, 2000; Stux & Pomeranz, 1987; O'Connor & Bensky, 1981) This compares favourably to the effects of potent drugs in treating chronic pain (morphine helps in 70% of these cases). (Beecher, 1955)

A problem with attributing all of acupuncture's effects to the placebo (which is based on a '*suggestive way*' or the fact that one just wants to believe that it works), was the fact that veterinarians in China have used acupuncture successfully to treat animals for years. (Goldman et

al., 2010; Lao et al., 2003; Tatewaki et al., 2003; Stener- Victorin et al., 2000; Needham, 1956) One of the earliest records of veterinary acupuncture was some 3000 years ago in India for the treatment of elephants; however, the father of veterinary acupuncture generally is considered to be Shun Yang (480 BCE) from China.

Dr. Bruce Pomeranz, working at the *University of Toronto*, has offered detailed summaries of modern research into the potential mechanisms of acupuncture. (Stux & Pomeranz, 1987) By activating small myelinated nerve fibres, acupuncture applications send impulses to the spinal cord, midbrain and pituitary-hypothalamus in the diencephalon.

Pomeranz et al. also discovered a relationship between TCM and the naturally occurring chemicals in the body known as endorphins. (Stux & Pomeranz, 1987) By binding to the opiate receptors that are found throughout the nervous system, endorphins are able to stop pain. The hypothalamus-pituitary releases Beta-endorphins into the blood and cerebrospinal fluid to create an analgesic effect by causing incoming pain signals from reaching the brain. Pomeranz discovered that pre-treating rats with naloxone, a drug known to block the healing endorphins, could not achieve pain relief using acupuncture. This finding suggested that endorphin release caused by acupuncture stimulus was an important mechanism behind acupuncture's pain relieving effects. (Stux & Pomeranz, 1987) This relationship between acupuncture analgesia and the endorphin system '*caused a great deal of excitement in the field of the scientific investigation of acupuncture.*' (Kaptchuk, 2000)

There are presently well over 100 different neurotransmitters and neuroendocrine substances in the body, (Purves et al., 2001) of which the endorphins constitute only one class. (Rubik, 1995) Hence, there is much work to be done in testing and researching these chemicals and their possible responsiveness to acupuncture.

Responses to acupuncture include changes in blood or cerebrospinal fluid levels of endorphins, enkephalin, or stress-related hormones such as ACTH. Much of the neurological research done by Pomeranz and colleagues (Pomeranz, 1996) brought acupuncture methodologies and outcome studies closer to the scientific world. Melzack considers acupuncture to be a form of gate-controlled analgesia, where the acupuncture pain relief is thought to be due to the phenomenon of pain inhibition by stimulation of large nerve fibers. (Walther, 2000; Wall & Melzack, 1984) Pomeranz was interested in the effects of electrical stimulation as well as the manipulation of acupuncture needles and discovered there was the difference between high frequency, low intensity vs. low frequency, high intensity applications. Acupuncture pain relief may be produced by stimulation of high-threshold, small-diameter nerves in the muscles that send messages to the spinal cord and then two other centres, the brainstem (particularly periaqueductal gray), and hypothalamic (arcuate) neurons, in order to stimulate endogenous opioid mechanisms.

The low frequency, high intensity sensory stimulation produced an analgesic effect which was slower at the onset but longer in duration as well as having cumulative effects.

Therefore, repeated treatments produce more and more benefits for human patients, (Pomeranz, 1996; Marteleto & Fiori, 1985; Price & Rafii, 1884) or laboratory animals. (Pomeranz & Warma, 1988)

The Nervous System & Qi

Pain researchers Wall and Melzack, (1984) as well as Simons et al. (1999), note the high correspondence (about 80%) between the location of acupuncture points and active and latent myofascial trigger points (MTrPs). Though discovered independently and labeled differently, in relation to pain control they represent the same phenomenon. However all active and latent

MTrPs are tender, though not all acupuncture points are tender. Tender and clinically relevant acupuncture points are called Ah-Shi points. In Chinese, Ah-Shi means Oh Yes! (That's the spot!).

All points that arise spontaneously are called Ah-Shi points and many of these points do not appear on the meridian maps. Baldry et al (1993) claim differences in their structural makeup noting that acupuncture points are located in the skin and subcutaneous tissues while trigger points are usually located in the intramuscular tissues. Baldry also notes that acupuncture points transmit by A-delta afferent innervation (sensitive to sharply pointed stimuli or heat), while MTrPs predominately use C-afferent innervation (sensitive to chemical, mechanical or thermal stimulus). Which route of reflex stimulation is producing a therapeutic effect and whether other mechanisms all work together is still open to debate. This debate can be widened if one considers the vast array of other reflex influences upon body function, including endorphin release, neurolymphatic and neurovascular reflexes, cranial stress receptors, and numerous other reflex phenomena presented in the research literature. (Walther, 2000; Goodheart, 1998-1964; Chaitow, 1987; Mann, 1987; Martin, 1983; Owens, 1937)

In acupuncture, the treatment point for a meridian imbalance is frequently found on the opposite side, and even the opposite end of the body from that of the diseased organ or area of symptoms. In a number of research studies one of these distant and contralateral treatment sites can have an effect in one or two seconds. (Kaptchuk, 2000; Stux & Pomeranz, 1987; O'Connor & Bensky, 1981) This speed of conduction excludes the blood and lymphatic systems (at least in this type of response) and leaves the nervous system as the primary mechanism of TCM. Li et al (2004) demonstrated that the density of afferent peripheral nerve endings in the skin and the muscles is much greater at acupuncture points. Li et al postulate that acupuncture points may actually be areas of high-density nerve endings and receptive fields. The neural theories of TCM, and the relationship of TCM with the sensorimotor system, once again suggest themselves.

Pomeranz presents Dung's (1984) review of the anatomy of acupuncture points. Ten structures are found in the vicinity of acupoints:

1. Large peripheral nerves. The larger the nerve the better.
2. Nerves emerging from a deep to a more superficial location.
3. Cutaneous nerves emerging from deep fascia.
4. Nerves emerging from bone foramina.
5. Motor points of neuromuscular attachments.
6. Blood vessels in the vicinity of neuromuscular attachments.
7. Along a nerve which is composed of fibres of varying sizes.
8. Bifurcation points of peripheral nerves
9. Ligaments (muscle tendons, joint capsules, fascial sheets, collateral ligaments), as they are rich in nerve endings.
10. Suture lines of the skull.

It is obvious that the most important anatomical reality in or near acupoints are nerves. The immediate acupoint analgesia upon stimulation of these channels, areas and points strongly suggests that a neural theory of acupuncture is important. Pomeranz emphasizes it is important to achieve de qi sensations during treatment, *'the acupuncture maps are specific in the sense of helping us find type II and III nerve fibres needed to obtain de qi'* (the arrival of Qi). Hong (2000) agrees with this observation, saying *'the best therapeutic effects obtained with either MTrP injection or acupuncture seems to be related to the production of LTR (local twitch response) or de qi.'* *'Acupuncture points probably also have a spinal relationship similar to that of the MTrP. I believe*

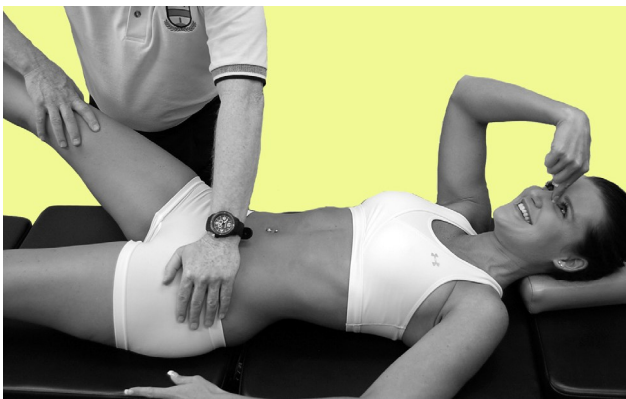
that the mechanism of acupuncture in pain relief is similar to that of MTrP injection, and is probably related to the spinal cord mechanism.'

Chaitow and DeLany (2008) quote Serizawa's 'nerve reflex' theory underlying the presence of 'active' acupuncture points.

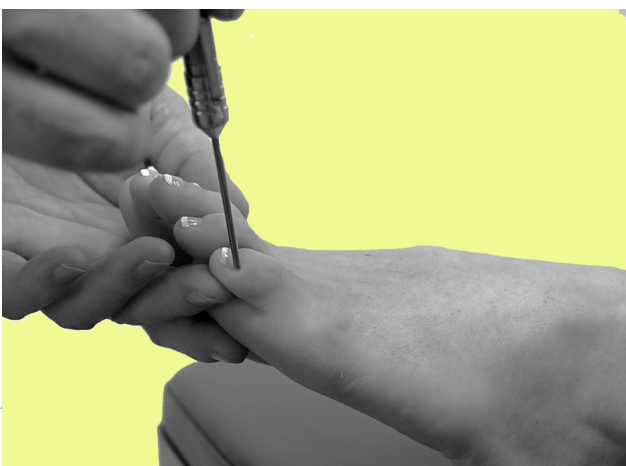
'The nerve reflex theory holds that, when an abnormal condition occurs in an internal organ, alterations take place in the skin and muscles related to that organ by means of the nervous system. These alterations occur as reflex actions. The nervous system, extending throughout the internal organs, like the skin, the subcutaneous tissues, and the muscles, constantly transmits information about the physical condition to the spinal cord and the brain. These information impulses, which are centripetal in nature, set up a reflex action that causes symptoms of the internal organic disorder to manifest themselves in the surface areas of the body ... The intimate relation between internal organs and external ones has a reverse effect as well; that is, stimulation of the skin and muscles affects the condition of the internal organs and tissues.' (Serizawa, 1980)

The conceptual link between acupuncture effects and the nervous system, and particularly the AK understanding of the myofascia's relevance in the diagnosis and treatment of pathophysiologies of many types, is clearly evident. The discussion of somatovisceral/ musculovisceral and viscerosomatic reflexes presented in chapter on Muscle-Organ-Gland relationships is relevant here.

Functional magnetic resonance imaging (fMRI) has also showed that stimulation to specific acupuncture points produces regionally specific, quantifiable effects on related neurological structures in the human brain. (Wu et al., 2002) When Circulation Sex-6 was stimulated (an acupoint important in the management of nausea, including vestibular-related motion sickness), fMRI showed that various regions of the cerebrum and cerebellum were stimulated, and clinical efficacy of CX-6 stimulation was mediated by the cerebellar vestibular neuromatrix. (Yoo et al., 2004) Cho et al. (1998) showed with fMRI that stimulating Bladder-67 (related to visual function) (Lade, 1989) in the lateral portion of the foot activated a region of the occipital lobe, associated with the interpretation of light entering the eye.



BL-1 (left) and BL-67 (below and below-left) involvement may be identified and treated with AK MMT and TL



Case Report: AK and meridian system diagnosis for hearing and vision loss (BL-1 and BL-67)

Goodheart (1982) was visited by an Italian nun who had lost both her hearing and her sight for about 5 years. She had *'gone through a whole gamut of tests and treatments in Italy in various hospitals, had several fasting cures, and acupuncture for 1.5 years. The acupuncture had in fact made her worse rather than better.'* The patient visited Dr. Tasse in Quebec who, by the use of AK techniques, was able to help her regain her hearing but was unable to affect much of a change in her vision. She visited Dr. Goodheart with Dr. Tasse for 3 days. Goodheart found that when the patient put her eyes into distortion, all of the original AK MMT findings returned, including positive MMT to the pulse points for the bladder and the kidney meridians. Because the bladder meridian problem recurred, Goodheart tapped BL-1 followed by BL-67 (the beginning and ending teltaneously correcting a respiratory cranial fault, the patient said *'I am seeing flashes of light'*, to which Goodheart replied that it was probably because he was touching her eye. But the patient told him that she was seeing light with the other eye. He continued to tap and unobtrusively turned on an otoscope and moved it from side to side. The patient said she still saw flashes but they seemed to be moving side to side. When the otoscope was moved up and down, she said that now the direction of the light perceived had changed to up and down. The next time she was seen, all of her vision had slowly but surely returned and maintained itself ever since.

Duffy (2004) has correlated disturbances in the bladder meridian with AK MMT findings, and Sprieser (2002) has shown the relationship between AK treatment to the bladder meridian and improved symptoms for 50 patients with interstitial cystitis.

Cutaneomotor and cutaneovisceral reflexes: Further AK and TCM links

In alignment with AK principles, TCM is based on the fact that stimulating the skin has an effect on the internal organs, muscles, and associated parts of the body, in agreement with Hilton's Law. This relatively simple reflex concept underlies the AK approach of therapy localisation, and its therapeutic usefulness has been largely ignored in the West. Numerous experiments demonstrate the existence of these cutaneovisceral and cutaneomuscular reflexes.

In a series of experiments Kuntz et al (Kuntz et al., 1940) stimulated the skin on the back of rabbits or rats and found changes in the duodenum or other parts of the intestinal tract corresponding to the dermatome stimulated. By employing a quick freeze-drying technique, it was shown that when a cold beaker of ice was applied to the back in the lower thoracic region, the arterioles in the subserosa and submucosa of the duodenum were constricted and the capillary beds in the intestinal villi became ischemic.

The vascular changes in the subserosa could also be observed in vivo photographically and by plethysmographic recording. An early AK study at the *Anglo-European Chiropractic College* also showed the relationships between stimulating various internal organs and changes in muscle function. (Carpenter et al., 1977) An important study by Travell and Rinzler investigated 9 patients with angina pectoris or acute myocardial infarction. (Travell & Rinzler, 1946) They found

that if the trigger areas on the front of the chest were infiltrated with procaine or cooled with ethyl chloride, complete and prolonged relief of chest pain usually ensued.

In the Kuntz experiment mentioned above using rats and rabbits, some were performed on animals with an intact nervous system under general anaesthesia, while others were performed on animals where the spinal cord had been transected in the lower cervical region. There was no difference in the two types of experiment, suggesting that the cutaneovisceral reflex is mediated on a segmental and intersegmental spinal level and not influenced supra-segmentally (placebo or otherwise).

Viscero-Cutaneous Reflex

The cutaneovisceral reflexes described above are of prime importance in acupuncture, for it is by these neurological reflexes that an acupuncture needle or stimulation placed in the correct part of the skin, subcutaneous tissue, fascia or muscle are able to effect the appropriate organ or diseased part of the body.

The viscerocutaneous reflex is of importance (i) in diagnosis (alarm points particularly) and (ii) in lowering the threshold of stimulation required in treatment by acupuncture. In acupuncture a somewhat smaller stimulus is needed if the acupuncture needle is put directly into one of these tender or painful areas or into a meridian that crosses or is related in some other way to the tender area. Presumably facilitation is taking place. This facilitation is also a safeguard, for if the acupuncture needle is put in the wrong place it has little effect, as it is easier to affect a diseased or disease related area than a healthy one. (Mann, 1987)

It is often noticed clinically that a disease of an internal organ will produce in some part of the skin (not infrequently of the same dermatome) pain, tenderness, hyperaesthesia, hypoaesthesia, etc. (Goodheart, 1998-1964; Chaitow, 1987; Mann, 1987)

The viscero-cutaneous reflex discussed here and the visceromotor/musculovisceral reflex are presumably the mechanism whereby diseases of internal organs produce pain or tenderness of certain acupuncture points, area of skin, muscle inhibition or spasm, etc.

What is Qi?

(Is it measurable?)

It is difficult for us to understand how, thousands of years ago, the Chinese could have developed the meridian system. The system was developed on an empiric basis and used from as early as the late Stone Age, and also by individuals who had higher sense perception. (Kaptchuk, 2000)

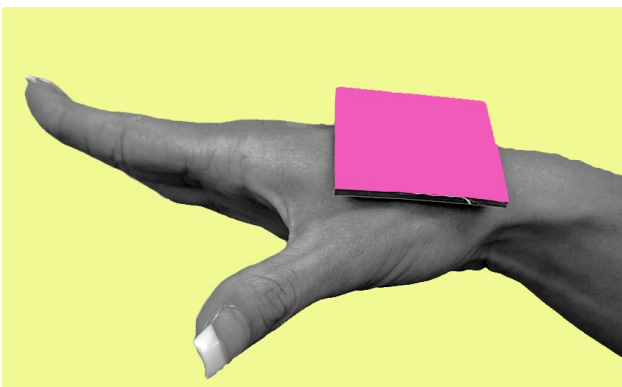
In the West concepts of physics have caused some researchers to identify Qi as energy. However in Chinese medical philosophy, Qi is a philosophical construct that is an attribute of all things in the universe, from rocks and rivers to animals and patients. Unschuld (1983) states *'The customary translation of Qi by some Western (and Asian) authors as "energy" represents a basic misconception that is not supported by Chinese ancient sources.'* O'Connor and Bensky (1981) state *'Qi is an untranslatable word in the Chinese medical lexicon. It signifies a tendency, a movement, something on the order of energy.'*

Nonetheless, the electromagnetic correlation of the meridian system can be observed by many methods. In Japan in 1951 Yoshio Nakatani, MD, PhD demonstrated in specific organ disease, a number of acupuncture points along an organ's acupuncture meridian (located on the wrists and the ankles) had a markedly decreased electrical resistance compared with the surrounding skin. (e.g. kidney disease showed several of the kidney points had a lowered skin resistance). He found the resistance values for these points varied with the time of day, ambient temperature, activity and emotional state of the subject.

The electrical resistance was then plotted on a graph to show the acupuncturist which meridians to treat. He named this technique *Ryodoraku*. *Ryo* meaning (good), *do* (electro conductive) *raku* (line denoting the level measured). This system is still used today in modern acupuncture practice. (Amaro, 2002) The points of Akabane are measured with a similar type of electrical meter. These are the terminal points of the meridians on the fingers and toes. There are problems in evaluating the meridians by electrical resistance because of the variable of skin resistance. In order to determine readings that are consistent and reproducible, it is necessary to eliminate the factor of the dead upper layer of epidermis, oil on the skin, etc.

The electromagnetic characteristic of the meridians can also be seen by the effect of lead over acupuncture points. (Corneal & Dick, 1987; Goodheart, 1975; Hawkins, 1975) When there is a deficient amount of energy in the meridian, a particular muscle associated with that meridian may be weak on standard MMT. Placing an acupuncture needle or tapping with the fingers or using a teishin into the appropriate acupuncture point will immediately cause a strengthening of the previously weak muscle. It would seem that the stimulation from the needle or tapping is the causative factor in the muscle strengthening. This can be proven incorrect by leaving the needle in place and covering it with a small piece of lead; the muscle will immediately return to its previously weak state. Removal of the lead will again return strength to the muscle. The same experiment can be done by placing an *Acu-Aid*, which is a small metallic sphere held in place by tape, over the acupuncture point. (Corneal & Dick, 1987; Goodheart, 1975; Hawkins, 1975) The *Acu-Aid* will give increased strength to the associated muscle, and the increased strength will be removed by covering the *Acu-Aid* with lead.

It appears that the needle and the *Acu-Aid* act as antennae for energy to be added to or subtracted from the meridian, as indicated by the over- or under-energy pattern present. This is further exemplified by the fact that the doctor can place his finger on the appropriate acupuncture point; immediately a previously weak muscle affected by the under amount of energy in that meridian will strengthen. However, it will again weaken if the doctor holds onto a water pipe or other grounded item. The grounding eliminates the antenna effect of the doctor adding energy to the acupuncture point.



Acu-Aid over LI-4 initially improves TFL MMT. With lead placed over Acu-Aid, this improvement disappears.



Other research into the energy of Qi

In 1978 Luciani produced Kirlian photographs of the LED (light emission diode) effect of acupoints along the Small Intestine meridian and the Large Intestine meridian. (Krippner and Rubin, 1974) The existence of a meridian system was further established by French researcher Pierre de Vernejoul, who injected radioactive isotopes into acupoints of humans and tracked their movement with a special gamma-imaging camera. The isotopes traveled thirty centimetres along previously established acupuncture meridians within four to six minutes. Vernejoul then challenged his work by injecting isotopes into the blood vessels at random areas of the body rather than into known acupoints. The isotopes did not travel in the same manner at all, further suggesting the meridians do indeed comprise a system of separate pathways within the body. (Royal, 1991)

Western doctors and scientist tried at first to explain the technique by saying it was the 'placebo effect'. This is the phenomenon in which 30% of people will be shown to be able to self-heal in experiments when given a sugar pill instead of the 'real medicine'. However, this was shown to be a false belief because animals (who couldn't respond to suggestion) also responded acupuncture analgesia procedures. (Kaptchuk, 1998; Zhang, 1977).

Western scientists (French) developed a special tissue, staining technique that allowed them to identify meridians in rabbits. Most scientists ignored this research until in the 1980s when two French researchers repeated the Hans experiment using radioactive tracers on human beings. (DeBary, 1999) They injected and then twirled (a needle technique used in acupuncture), radioactive technetium into the acupoints of patients and used nuclear scanning equipment to follow the flow of technetium. They also injected non-acupoints. At non-acupoints, the radioactive tracer diffused outward from the injection site into circular patterns. When the true acupoints were injected, the radioactive technetium followed the exact pathways as the acupuncture meridians in the ancient charts of the human body. They also found that when acupuncture needles were inserted into distant acupoints along the same tracer- labeled meridians and then twirled, a change was produced in the rate of flow of the technetium through the meridians. This research supported the ancient Chinese claim that the acupuncture needle stimulation affected the flow of Qi through the established meridian system. (DeBary, 1999)

Skeptics of TCM and chiropractic

Acupuncture Needles

Ernst, as part of a general critique of the CAM professions, (Rosner, 1999) has written about the risks of acupuncture. (Ernst & White, 1997) However MacPherson (1999) reviewed the original reports that were the basis of Ernst's critique, and shows that the attribution of injury to acupuncture is possible in only one of the five cases. The rest of the evidence reviewed by Ernst is seriously flawed. (Kaptchuk, 2000) Despite the broad evidence base for TCM, authors like Ernst repeat in dozens of repetitious skeptical critiques that '*Numerous reviews have produced little convincing evidence that acupuncture is effective in reducing pain.*' (Ernst et al., 2011)

Only one year after the Ernst critique mentioned above, the National Institutes of Health Consensus Development Panel on Acupuncture (JAMA, 1998) stated :

'there are other situations, such as addiction, stroke rehabilitation, headache, menstrual cramps, tennis elbow, fibromyalgia, myofascial pain, osteoarthritis, low-back pain, carpal tunnel syndrome, and asthma, in which acupuncture may be useful as an adjunct treatment or an acceptable alternative or be included in a comprehensive management program.'

The NIH Consensus Panel also spoke to acupuncture's ability to relieve pain:

'There is clear evidence that needle acupuncture is efficacious for ... various pain problems. There is evidence for efficacy for postoperative dental pain. There are reasonable studies (although sometimes only single studies) showing relief of pain with acupuncture on diverse pain conditions such as menstrual cramps, tennis elbow and fibromyalgia. This suggests that acupuncture may have a more general effect on pain.'

This prestigious panel's positive endorsement for the validity of acupuncture for at least some conditions has meant that acupuncture has made significant advances within the scientific community.

Ernst has also consistently warred against the chiropractic profession with several publications for at least the past 16 years. (Ernst, 2008, 2006, 1994) As in the 2011 review by Ernst cited above regarding acupuncture, Ernst et al. state about chiropractic: (2006)

'Collectively these data do not demonstrate that spinal manipulation is an effective intervention for any condition. Given the possibility of adverse effects, this review does not suggest that spinal manipulation is a recommendable treatment.'

Fortunately, many of Ernst's assertions regarding spinal manipulation and chiropractic have been discredited in the past, (Bronfort et al, 2006; Rosner, 1999) and in several instances found to be blatantly misleading. (Morley et al., 2001) They failed to refer to relevant literature, offered inaccurate reporting of the contents of published work, and carried errors in citation. Morley et al (2001) raised serious questions about the nature of Ernst's academic misconduct.

In conclusion, the objections raised by skeptics to chiropractic and TCM are easily refuted. The overwhelming evidence supports the hypothesis that acupuncture and chiropractic are effective in the treatment of chronic and acute pain.

If this clinical debate continues even within the chiropractic profession itself, where several elements within the profession not accepting AK principles as intended by the founder, then a method of bringing the clinical knowledge of the East and West together may be ignored for another fifty years.

However as time goes on, the medical and scientific world of the West better understands the actions and principles of the East, and this understanding will begin to blend for the benefit of the health of all humankind. This paper is our effort to help fellow practitioners appreciate the different interpretations of meridian energy and to have these professionals understand another anatomical/ structure-function aspect of CAM and the chiropractic profession most had not considered until this time.

Acupuncture needles

There are many methods of stimulating the acupuncture points. Of course, the classic and most widely known method is that of acupuncture needles. Digital pressure, teishin, moxibustion (heat), ultrasound, electrical, laser and vacuum are all forms of stimulation . Authorities in meridian therapy differ as to which form of stimulation is the best method. In AK meridian therapy, it is found that digital pressure is an effective method of stimulation and is preferred because of convenience.

Contraindications in the use of acupuncture needles include:

- ▶ Patients who absolutely hate needles
- ▶ Patients on any form of steroid medication
- ▶ Patients taking anticoagulants will bruise badly
- ▶ Patients will also be asked not to drink alcohol on the day of treatment

Deep needling is contraindicated in patients with bleeding disorders or taking anticoagulant drugs. Systemic infection is very uncommon, acupuncture should probably be avoided in patients with valvular heart defects

Side-effects of needles:

- ▶ Local bruising around site of needle
- ▶ Tiredness after treatment, especially the first treatment the patient can feel light-headed
- ▶ Indwelling 'press' needles, commonly used in treating addiction, should be used with care as they have been associated with infections such as perichondritis (Peters, 2002)

Even the ancient *Nei Jing* expressed concern about the improper use of acupuncture needles.

Despite all of this, serious adverse events from acupuncture needles are rare, even though it is one of the more invasive forms of complementary and alternative therapy. Acupuncture, then, seems to be relatively safe. However, needle pain, dizziness and discomfort are not unusual, and minor adverse effects, such as fainting, local skin infections and transiently increased pain, although not uncommon are easily avoidable. (Reynolds & McKee, 2008) More serious events (e.g. internal injuries to the pleura, kidney or spinal cord) are reported very occasionally and, although systemic infection is rare, can be extremely serious. A worldwide systematic review found a total of 395 serious reported cases in 20 years, the most common being hepatitis. (Peters et al., 2002)

TCM Effectiveness

George Soulie de Maurant lists thousands of conditions that are responsive to acupuncture in his opus *Chinese Acupuncture*. (1994) Until 1973 most of the evidence for TCM was anecdotal, with an enormous collection of case histories from one quarter of the world's population. An excellent summary of modern research conducted in China came from the Shanghai Institute, and was translated by O'Connor and Bensky. (O'Connor & Bensky, 1981)

However at this time there have been hundreds of controlled clinical studies of TCM conducted in the West using the more exacting scientific standards of EBM. Stux & Pomeranz (1989) give detailed reviews of over 200 studies in the West. Pomeranz suggests that '*the neurological mechanisms of acupuncture analgesia*' are rapidly becoming apparent. Hopton & MacPherson, (2010) in systematic review of acupuncture for the most commonly occurring forms of chronic pain (back, knee, and head) published between 2003 and 2008 found that for short-term outcomes, acupuncture showed significant superiority over sham treatment for back pain, knee pain, and headache.

For longer-term outcomes (6 to 12 months), acupuncture was significantly more effective for knee pain and tension-type headache but inconsistent for back pain (one positive and one inconclusive controlled clinical trial). In general, effect sizes (standardised mean differences) were found to be relatively small. The accumulating evidence from recent reviews suggests that acupuncture is more than a placebo for commonly occurring chronic pain conditions.

Acupuncture is one of the most popular therapies amongst doctors and it has been subjected to more research than almost any other therapy. However, methodological quality in this area has gradually improved because there are many problems concerning TCM clinical trials. A recent review of almost 3000 trials concluded that the quality of trials of TCM must be improved urgently. (Sood et al, 2005)



Case Report: AK and meridian system diagnosis for arterial hypertension

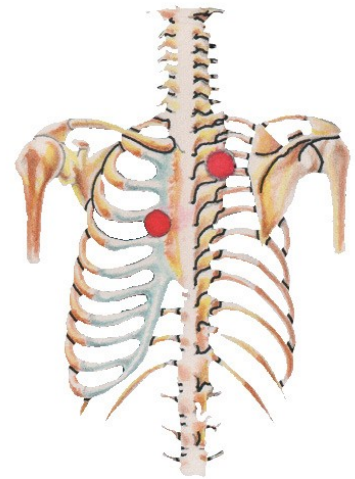
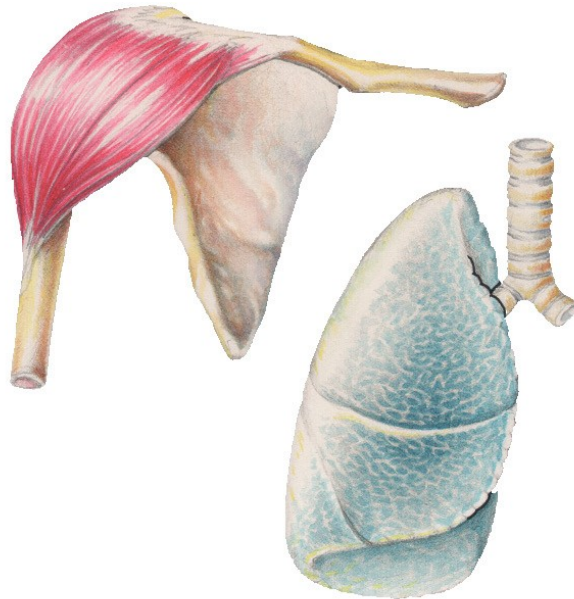
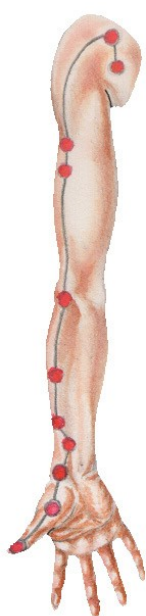
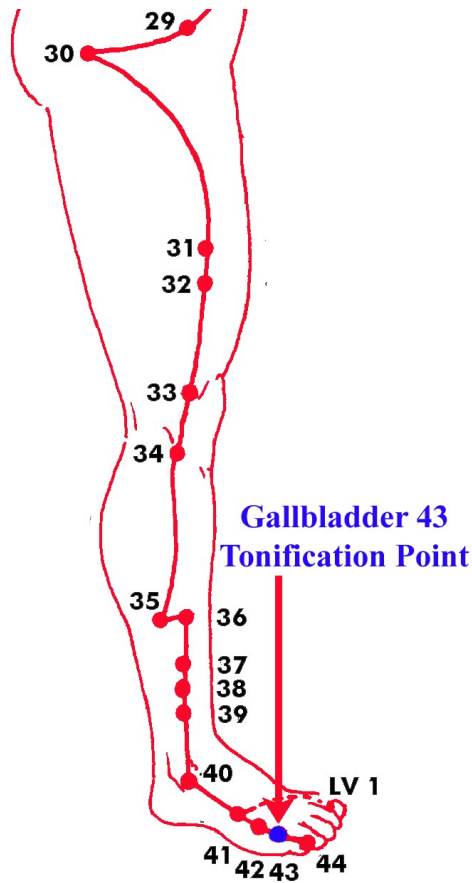
A male patient, age 40, came for treatment of arterial hypertension. (Garten, 2002) The pressure was 200/130 without the drugs he usually used (Beta-blockers). The patient was treated by means of AK (mainly cranial faults, cervical problems, dural tension). Acupuncture findings were corrected. After the first treatment the pressure dropped to 170/110. Three days later there was a second AK treatment, which brought the pressure down to 160/105. There were no more acupuncture findings with AK diagnostic means.

A Traditional Chinese syndrome diagnosis was then done and the patient was treated according to the pattern Kidney Yin Deficiency with Liver Fire Blazing Upward. The first treatment brought the pressure down to 150/100. There was a subsequent drop down to 140/90 without further treatment. A maintenance treatment with classical acupuncture was done, which stabilised the effect.

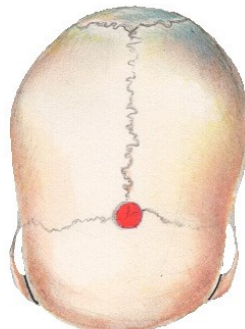
Case Report: AK and meridian system diagnosis relates ankle sprain to gallbladder attack

An example of the muscle/meridian interaction applied to a health problem is as follows. Christy, who had been receiving maintenance health care in our clinic for several years, came in with severe abdominal pain. (SCC, case files) Examination revealed an obvious gallbladder attack, but the curious factor was that gallbladder problems – or for that matter, digestive problems of any type – were not characteristic of this individual. She originally came to the office for treatment of low back pain and decided to use a maintenance approach to health. She had experienced health problems for several years. Upon questioning her regarding dietary indiscretions, etc., no positive response was elicited. The muscle associated with the gall bladder is the *popliteus*, a small muscle behind the knee. It tested very weak, and examination procedures were begun to find which energy pattern, nerve involvement, etc., would cause it to strengthen. Stimulating the tonification point on the gall bladder meridian caused strength to return immediately to the *popliteus* muscle.

Now comes the question: *why was the gall bladder meridian deficient of energy?* The sections of the body through which the gall bladder meridian runs were examined, and a small amount of swelling was noted on the outside of the ankle. Christy was asked about this, and she said, 'Oh yes, I twisted my ankle a little when I was in yoga class doing tree pose.' The severe pain of the gall bladder attack was diminished within minutes after massaging the swollen area and utilising very light manipulation to the ankle. This returned normal balance to the gall bladder meridian and within a half an hour pain in the abdominal area was totally gone. Christy's original pain was severe enough that most people would have sought hospital emergency room treatment. The total understanding of the cause of the problem provided a direct method of giving her relief.



The AK approach offers multiple options for specific conditions



Lung reflexes measurable using AK and TCM methods

Case Report: AK and meridian system diagnosis of breathing stress and chest pain

An example of the muscle/meridian interaction applied to a health problem is as follows. Bob, a 50-year old male, with no overweight problems was referred to our office (JLS) by his internist. He had been to the cardiologist and pneumonologist for extensive examination and testing for the shortness of breath he had been experiencing for several months. All medical tests were negative and his internist just couldn't get him to take a medication without knowing what was wrong. Examination revealed obvious laboured breathing and lung dysfunction. The curious factor was the lung, heart and chest were examined by three medical specialists and nothing out of the ordinary could be found. He had come to the *Integrative Medicine Centre* to seek an alternative answer to the problem. He was an extremely fit and healthy individual experiencing no health issues for the past five years. Upon questioning him regarding any musculoskeletal issues the week before he noticed his symptoms appear, he reported a strain of the right shoulder that kept him from lifting weights and working out on his regular schedule. The muscle associated with the lung is the deltoid, a large muscle of the shoulder. Permission was asked to do a battery of manual muscle tests to investigate the possibility of a muscle involvement with the lung and breathing issue. Upon AK testing of the right deltoid it was extremely weak. The left was strong and tested normal.

Examination procedures were begun to find which energy pattern, nerve involvement, etc., would cause it to strengthen. The AK procedure was explained to him and again permission was asked to continue to use AK procedures to determine the outcome. He agreed, and within ten minutes of treatment, the muscle was restored to full strength. It was explained that this procedure might have to be repeated several times before it became a permanent correction since there may be other factors involved.

It was stimulation of the tonification point on the lung meridian that caused strength to return immediately to the deltoid muscle.

Now comes the question: *why was the lung meridian deficient of strength and energy?* The sections of the body through which the lung meridian runs were examined, and a small amount of swelling and pain upon palpation was noted at the deltoid. Bob was asked about this and he said *'I waited a few days and when the pain reduced I forgot all about the shoulder when the breathing and lung symptoms developed.'* The shortness of breath was diminished within minutes after AK procedures were utilised with very light manipulation to the right shoulder. This returned normal balance to the lung meridian, and within a half an hour, pain and discomfort in the chest area was totally gone. Bob's original pain was severe enough that he sought medical help from not only his family doctor, but several specialists as well. Through the understanding of the meridian system and the muscle relationship, a total understanding of the cause of the problem provided a direct method of relief.

Summary

During the founding of AK, Goodheart discovered that Chinese medicine theory and procedure proved to be an integral part of AK methodology. Our brief literature review indicates that even though it is not yet established in scientific theory, meridian energy seems to be accepted as such.

The same conclusions are derived about the acupuncture channels although their principles are not yet set in stone. However based on outcome studies and the latest research in myofascial meridian therapy as well as neurology, their modalities and neurophysiological principles are proving to be more scientifically accepted each year by the Western scientific community.

There is no doubt that AK has helped millions of patients around the globe due to the growth of the technique and its following. There is little doubt this evidence will be amassed to illustrate the firm scientific footing this technique is moving toward. Here it must be apparent that acupuncture and meridian therapy have been helping people with their ailments and pain for many thousands of years without scientific endorsement, as have several other healing arts and procedures. For some reason within the last several centuries' science has taken the limelight from philosophy. Yet remember the energy of yin and yang... one can't dominate very long without change, and the other must then move toward domination.

We in AK have a good beginning with the steadily growing research that has been presented in the last few decades. If the next decades of research are as copious, AK and TCM will be well established scientifically and even more blended together than they are today.

China as a superpower should be urged to place its people's 'health and wellbeing' above GDP amid the geopolitical ambitions it is forcing upon its neighbours, and the climate threat. Economists say China should adopt new development models to meet its net-zero emissions and human rights goals. Using the best technologies from another country is perfect for a dictatorship, China is surely not anything else, politically speaking. Using its ancient history in healing, before Chairman Mao's transformation of the country, is a useful strategy for physicians in the West.

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About the author

Scott Cuthbert, DC practices in Dumaguete City, Philippines and is Associate Editor with the *Journal*. He has served on the Board of Directors of the *International College of Applied Kinesiology USA*. He is the author of three textbooks on applied kinesiology (in addition to 15 papers cited by *Index Medicus*, and over 50 peer-reviewed research papers) on applied kinesiology approaches to functional health problems. As this clinical paper demonstrates Dr Cuthbert practices chiropractic with Mastery of the



AK approach with a deep understanding of its history of development and its clinical approaches. This paper contains photographs taken and compiled by Scott Cuthbert, BA, DC.

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Appendix: AK Research on TCM

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