

# The Dancing of Opposites

## *KINESIOLOGY: EASTERN AND SPORTS MEDICINE PERSPECTIVES*

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The study of movement is referred to as kinesiology in the sports medicine arena and is the fundamental foundation of exercise, sports and dance performance, and health and wellness.

The academic discipline itself is just over 20 years old in mainstream education in spite of its long history rooted in physical education. The comparative perspective between sports medicine and Eastern medicine will be interesting and really identify the transition science is currently struggling with involving the integration within the environment beyond just the physiological and psychological components currently within the field.

This will be a journey into the similarities and vast differences associated within each academic and professional discipline as well as the physiological principles, diagnostic methodologies and applications within each respected discipline with movement associated with human health and disease.

### Sports Medicine Perspective

In sports medicine, typically kinesiology is associated with exercises are geared more towards dance and sport specific performance. The focus is on training to strengthen, lengthen and stabilize joints yet keeping the muscles flexible to prevent injuries. Another aspect, only recently gaining momentum in the past decade, is research addressing the athlete getting in "the zone" or "flow" preparing for and/or during competition.

The academic discipline of kinesiology is recognized within many universities/colleges and examines physical activity (movement) and its associated causes and compensation patterns as a result. This is applied to sports medicine, rehabilitation and preventative exercises, occupation, dance, sport, play, corporate fitness, nutrition and normal daily activities. The profession is typically an interdisciplinary academic approach including topics as anatomy, physiology, exercise science, biomechanics, sports medicine, philosophy, biochemistry, molecular/cellular biology, motor behavior, psychology/sociology, measurements, nutrition and physical fitness.

This became an academic discipline as a result of the transition from physical education to kinesiology in the early 1990s. This was a really big deal at the time because of academic arrogance within biological science resulting in physical education majors and faculty not being taken seriously. Unfortunately, this is still present today but to a much lesser degree than in the 1990s. This transition for credibility within the sciences and merit within the profession was the result of the sports science faculty promoting an initiative to change the name to "kinesiology" where the focus was geared more towards the academic rather than professional. The American Academy of Physical Education voted to call the discipline kinesiology and thus became the American Academy of Kinesiology and Physical Education (AAKPE). Shortly thereafter, many departments in academia voted to become departments of kinesiology while others departments became sports science or exercise science.<sup>1</sup>

For the most part this field has focused on musculoskeletal compensation patterns rather than internal medical conditions. Only recently is movement being addressed to deal with the epidemic of Type II diabetes in the United States. In this perspective the focus is increasing movement in order to increase anaerobic activity which increases muscle density in turn increasing the metabolism. By increasing the metabolism this increases the supply and demand for insulin receptor sites thus decreasing blood glucose levels.

The application within sports medicine is interesting because it requires the athlete to be responsible for the training levels with some assistance of a strength and conditioning coach or certified athletic trainer. Most of the time due to the volume of athletes whether professional, Olympic or collegiate this is typically addressed once the athlete informs the certified athletic trainer that pain is present and/or an injury is occurring. In professional sports, many athletes do not want to bring attention and identify they have an issue and they deal with it on their own. Primarily this mindset within sports decreases red flags from being raised of an injury because this may be associated with season career longevity to prevent the team from trading these athletes. Many collegiate athletes tend to play through pain and once injured, a problem is identified, then steps can be taken to implement a course of action to assist the athlete in rehabilitation and/or implement injury prevention exercise program.

Another facet in dealing with elite athletes is addressing mental focus and training through movement exercises. This is referred to by many athletes as being in "the zone." This is an experience where everything an athlete has strived for comes together (training, skill and mental discipline) and athletes achieve a unity where the boundaries that can limit performance and brings awareness and action through movements. For many years this was a dimension of sport culture not really talked about yet known among athletes. Michael Novak, a philosopher, wrote, "This is one of the great secrets of sport. There is a certain point of unity within the self, and between the self and its world, certain complicity and magnetic mating, a certain harmony, that conscious mind and will cannot direct. ... The discovery takes one's breath away."<sup>2,3</sup>

These profound and extraordinary experiences are extremely common in athletics, more so than in any other academic discipline within sports medicine.

Many elite athletes psyche up into their zone with rituals implemented before competition. It also is a form of individual meditation.

### Chinese Medicines Perspective

Eastern philosophy approaches movement from an entirely different perspective that describes the natural world as being interrelated with the human as a dynamic relationship. The description of this perspective and their interrelationships is rooted within the five elements. Understanding the *Zang/Fu* organ association is the key to understanding how to balance the body. The study of movement is addressed in Chinese Medicine and based within martial arts. There are different aspects of martial arts one is external (hard) and the other is called internal (soft) forms. We are going to concentrate on the internal (soft) marital arts of *Tai Qi* and *Qi Gong*.<sup>4</sup>

The philosophy within the soft forms of martial arts are interrelated and used for different purposes yet at the same time one cannot be without the other - this is the mutual dependence of this perspective. This is the most fundamental aspect within Yin/Yang. The dance of two opposing forces with the focus on health related to keeping them in balance. This is the foundation of the Taoist/Daoist philosophy, which articulates the natural order and balance of the universe with everything in it is divided into Yin/Yang qualities. Of course, Yin qualities are more female oriented

soft, night, cold and color is associated with black. While the Yang qualities on the other hand has more male oriented, aggression, hardness, daytime and the color of white.

When applied to movement there are two aspects as Yin/Yang has two sides. Here it is referred to as Yin/Yang hands. Yin hands is associated with the internal martial – the healing aspect of injury and illness of *Tai Qi* and *Qi Gong*. While the Yang hands are associated with the external martial arts used for defense. Basically *Tai Qi* is the balance between the two sides – Yin/Yang – again the central part of Taoist philosophy!

### *Tai Qi Chuan & Qi Gong*

*Tai Qi* origins date back to the 13th century CE, with influences dating as far back as the Tang Dynasty (618-906 CE) many Masters within *Tai Qi* agree that the pioneer was *Zhang Sanfeng*, Taoist monk, basically he incorporated Yin/Yang philosophy into Chinese wushu (martial arts).

By practicing *Tai Qi Chuan* it keeps the balance of mind, body and spirit promoting healthy and harmonious lifestyle which prevents disease. Here in the United States, most Americans are familiar with the Yang style – thought to be used for exercise incorporating moving meditation and relaxation. Although this is true to a certain extent it also encompasses the articulation for levels of consciousness. Learning *Tai Qi* movements are extremely easy and anyone can do it. They are a series of dancelike slow, individual rhythmic, smooth, continuous, and graceful movements done in a relaxed manner.

The art of *Tai Qi* is extremely difficult to master because there is the same discipline and dedication associated with consistency over a long period of time that cultivates ones internal *qi*.

The more an individual practices the greater the mastery of the movements, thus the mind becomes clearer and calm. The more connected you are with yourself and the environment around you the greater your perception and awareness of the world around you!<sup>4,5</sup>

The progression over the years ascending from the lower *dan tain* to the upper *dan tain* provides greater balance and harmony between the human and the environment and internally maintaining homeostasis within the cellular environment counterbalancing disease. This is considered increasing ones level of consciousness. The integration of the mind, body and spirit operate as a collective whole!

The ability to transform *Jing* into *Qi* and then into *Shen* is related to the *dan tain* (three treasures).

Within this context the movements of *Tai Qi* is a means to tangibly exercise with the goal to counterbalance *qi* which has become stagnant and/or deficient and redirect it along the movements specifically work with the flow of energy rather than limited to specific joint movements for increasing strength, joint stabilization and/or stretching commonly associated with sports medicine rehabilitation.

The connection between *Tai Qi Chuan* and *Qi Gong* with practicing *Tai Qi* on a regular basis, the individual is able to develop or "cultivate" their internal *qi* and is then able to guide and move it. An integral aspect of developing ones internal *qi* amplifies ones healing abilities when working with patients. Thus, *Tai Qi* is a fundamental aspect within *Qi Gong* because one is generating strong circulation of *qi*.

*Qi Gong* includes deep abdominal breathing which moves *Qi* along the spine and then spreads

through the body this also strengthens the *dan tain* (lower *jiao*). So, in the context of kinesiology *Qi Gong* is the systematic study and experience of *qi* movement. Its roots date back to the *Sung* Dynasty (960-1279 CE).<sup>4,5</sup>

Primary purpose is to feel the Tao which is the intrinsic order of the cosmos. This is based upon the universal laws in which all natural phenomena involve the continuous interplay between Yin (Earth) /Yang (Heaven).

### *Dan Tain* - The importance of the Three Treasures

Everything moves and develops through the *dan tain*. The *dan tain* is where *qi* gathers in the spaces within the subtle body. *Qi Gong* and *Tai Qi* use the three treasures or upper, middle, lower *dan tains* to gather, circulate and refine *qi*. From the Taoist perspective, there is an interrelationship between the physical body and cultivating consciousness of the spirit or mind (*Shen*). By doing these series of movements this not only provides physical movement but also develops vital energy. The Taoist/Daoist understands that physical practice of movement is the root of *Shen* and increased consciousness as well as overall health.

The three treasures are *Jing*, *Qi*, and *Shen* and are cultivated, for the purpose of improving physical, emotional and mental health. This is the interrelationship between the environment and the human on a much more subtle level than the physical. *Jing* represents the lower *dan tian* and associated with reproductive system within the Western perspective. It is important to note that in Chinese perspective it is associated with the bones with the *Zang/Fu* organs being the Kidneys and the Lungs. Yin character is downward movement. *Qi* represents the middle *dan tain* and is connected with everything in the universe. In the Western perspective, this would represent the respiratory system. From the Chinese perspective the element is Air and the Spleen is associated with the middle *Dan Tian*. It is represented within the meridians and the upward and downward movements and its character is *Tai Qi* which is cultivated through internal martial arts.

*Shen* represents the upper *dan tain*, which is associated with spiritual energy and the mind. *Shen* is the connection with the universe and consciousness and moves through the *Ren Mai*, *Du Mai* and *Chong Mai* which are three of the Eight Extra Meridians. *Ren Mai* runs down the anterior midline, *Du Mai* along the spine and *Chong Mai* from the perineum through the crown in the center of the body. *Shen* is represented within Western perspective is nervous system. Within the Chinese perspective the association with the *Zang/Fu* organs of the Heart and Liver and its element is Fire. It's Yang in character with upward movement and associated with the Extra Meridians. *Shen* is cultivated through meditation.<sup>6,7,8</sup>

*Qi Gong* provides a means of connecting back into nature itself - one can refine their *Jing*, then convert it into *qi*, further refining *qi* then converting it into *Shen*.<sup>7,8</sup> The knowledge and individual's ability to cultivate and bring awareness to their own internal *qi* providing the basis of intention and guiding *qi* for treating patients. This also strengthens the lower *dan tain* the basis of strong *qi* for martial arts and balanced connection between *dan tains* used to prevent chronic disease by addressing subtle imbalances within the body brought on by emotions, food quality and quantity, water quality and quantity, stress (physical, emotional and mental), relationships etc.

### Conclusion Summary

The implementation of kinesiology is vital to overall health from both the Western and Eastern perspectives. The difference within the Western perspective is the implementation of these movements primarily from the basis of physiological perspectives related to: 1. Dysfunction due to

acute injury or surgery; 2. Dysfunction due to chronic injury that is related to tendonitis and associated compensation patterns; 3. Health related issues due to a sedentary lifestyle associated with cardiovascular disease, obesity, and/or diabetes to name a few; 4. Manage stress; 5. Performance enhancement; 6. Strengthen weak muscles to support physiological strength in healthy and those seeking greater health and wellness.

These are reactionary to specific conditions that are focused primarily on musculoskeletal compensation patterns rather than internal medical conditions. Only recently is movement being addressed to deal with Type II diabetes here in the United States. In this perspective the focus is increasing movement in order to increase anaerobic activity which increases muscle density in turn increasing the metabolism. By increasing the metabolism this increases the supply and demand for insulin receptor sites thus decreasing blood glucose levels. This represents a purely physiological perspective rooted in the biological sciences that is applied within sports medicine which is still largely reactionary based rather than preventative.

Eastern philosophy goes beyond the biologically based physiological level. The difference is the inclusion of dynamic relationships with the environment. This includes the concept of developing or "cultivating" internal *qi* to guide and move it in order to maintain balance.

This is done specifically with movements of the soft martial arts as *Tai Qi* and *Qi Gong*. The basis deals with the lower *dan tain*. If the *dan tain* is strong then the *qi* is strong. Breathing that is associated with *Tai Qi* and *Qi Gong* connects the physical and *Shen* (spirit/mind) because it travels through three Extra Meridians (*Du*, *Ren* and *Chong Mai*).

This aspect differs greatly with the sports medicine perspective because it is associated with levels of consciousness. However, athletes experience "the zone" with competition that is where training, skill and mental discipline are all in sync and where exceptional clarity of the moment and great performances are considered personal bests. Eastern philosophy encompasses many layers beyond just the physiological manifestations that are precursors to chronic disease that is not yet acknowledge within biological science or sports medicine perspectives.

Kinesiology - movements - done from the soft martial arts as *Tai Qi Chuan* and *Qi Gong* cultivate all layers articulated within the three treasures that ultimately create, maintain and counterbalance imbalance. This is the connection back to nature that Eastern perspectives address within Chinese Medicine's diagnostic methodology, TCM physiology, and treatment strategies. Unlike kinesiology within the sports medicine arena energy is an integral aspect of human health within Eastern perspectives and is tangibly accessed through movement and exercise!

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