THE EFFECTS OF A

TOUCH FOR HEALTH ENERGY BALANCE

ON MUSCLE STRENGTH AND RATIO

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Chapter 1 - Introduction

Purpose

The purpose of this thesis is to determine the significance of Touch for Health Energy Balancing (TFHEB) on the strength and ratio of the quadricep and hamstring muscles.

Significance

To this date there is no empirical evidence to support the effectiveness of Touch for Health (TFH). However, it is used extensively by professionals like chiropractors, medical doctors and teachers and by non-professionals such as nurses assistants and home makers (Thie, 1988).

Touch for Health is described as a natural healing process involving various touch techniques to relieve physical and emotional pain and stress (Thie, 1976). Touch for Health was first developed to allow lay people (non-professionals) an alternative to expensive professional health care and was introduced to the public in the form of a self-help manual. TFH was then set up as a workshop in the educational model to assist people in using the book (Thie, 1976). TFH grew large-enough to support a membership of 780, and 582 TFH instructors (Utt, Personal Communication, March, 1991).

TFH has its roots in Chinese medicine which works with the energy field of the body before any physical manifestation of illness is evident (Lubecki, 1985). In China today, an exercise called Qi Gong is used to cure as well as prevent illness (Einberger, 1985).

In the healing practices of the Chinese doctors, the energy field would be reinstated to wholeness and the patient would be sent home. Their belief was that doctors assisted them before the onset of illness and if they did get sick the Chinese doctor would treat them free of

charge until they were well again. Nei Ching, a classic Chinese writer of 4000 years ago said: “The superior physician helps before the early budding of disease. The inferior physician begins to help when disease has already developed; he helps when destruction has already set in. Since his help comes when disease has already developed, it is said of him that he is ignorant.” (Lubecki, 1985, pp. 136).

In more recent times, a Harvard doctor named David Eisenberg visited China (from the years 1977 - 1983) to explore China's unique approach to illness and health. It is evident that the questions about the energy field are still present. While in China he discovered that 3 million Chinese practice a series of movements called Qi Gong which allow the flow of "Internal Qi" ("vital energy" or energy field) to produce health. A few Chinese are known as Masters because they have learned to project their internal energy ("Internal Qi") into "External Qi" which can cure other people. These people would be the modem Chinese doctors of 3000 years ago.

In 1983 Eisenberg returned to the ‘People's Republic’ with a medical delegation whose primary objective was to study the most fundamental and baffling element of Chinese medicine - Qi, the concept of 'vital energy’. They were very skeptical in everything they witnessed and experienced. The result at the end of their tour was an invitation by Benson, one of the American doctors, to the vice-minister's office of Beijing to collaborate with the United States of America in an effort to prove Qi exists.

The Chinese want to believe that Qi exists because it has been part of their culture and heritage for at least 3000 years. Yet, there has been no "scientific" evidence to support their belief (Eisenberg, 1985). Eisenberg goes on to say: “The burden of proof remains on the Chinese. Research to date (1985) cannot prove or disprove Chinese claims about Qi Gong.

Dr. Lu Bing-Kuai, vice-president of the All-China Institute of Traditional Chinese Medicine and president of the Beijing Qi Gong society, told our delegation, Qi Gong is an ancient practice, part of the 'national treasure-house' of traditional Chinese medicine. We have tried these past few years to understand it by means of modem scientific principles and techniques. We do not yet understand it and would like your help in defining the nature of Qi.

It is my conviction that in order to fully comprehend Qi Gong and those aspects of healing associated with Qi Gong, there must be more than the simple application of current scientific principles and methodology. What is necessary is a revolution in Western biomedical science. We shall see." (pp. 29)

TFH allows people to be responsible for their own health by teaching them to feel and see immediate physical effects such as improved posture from an energy balance and consequently resulting in body awareness (Thie, 1987).

The potential benefits of Touch for Health (TFH) are numerous. Athletes are concerned with two things; their performance and their physical health. Without their health they would be predisposed to injury (Cuillo and Zarins, 1984). Injuries in professional sports cost time and money for the athletes, coaches and owners (Perry, 1980). Margaret Sheehan, a TFH and Fitness Instructor and a massage therapist, has used TFH in her fitness classes and with her clients. When someone was having difficulty with a movement she would direct them to massage a particular point on the body and the movement would be easier. If exercise is easier, people may participate more regularly and continue their exercise programs until they reap the benefits (Sheehan, 1987). The best response Sheehan (1987) had to her TFH techniques was from a triathlete who used it to help him to 6th place at the Iron-Man in Hawaii.

One of the TFH techniques is an energy balance which involves an Applied Kinesiology technique called muscle testing and other techniques such as massage, and fingertip touch; hence, the name Touch for Health. TFH allows touching to be a positive healing experience and could be a welcomed experience in our world (Montagu 1986). If more people in the world had the positive, healing experience of touch, maybe there would be more love and respect in the world (Buscaglia, 1972).

This experimenter was introduced to TFH one year after back surgery and, after traditional rehabilitation methods such as ultra sound, T.E.N.S., ice and heat therapy failed to relieve the back pain caused by the surgery. TFH was an alternative therapy that worked for me.

Review of Literature

Touch for Health is considered by some to be an alternative healing practice (Bulbrook, 1984) and a form of preventative medicine (Thie,1976). Touch for Health is an educational approach to energy using touch techniques to realize an holistic lifestyle where body, mind and spirit come together (Thie, 1976).

Touch is the first sense to development in a human embryo, and one of the most vital to survival (Bee, 1985). Without touch babies have been known to die (Maynard, 1984). Spitz (1945) compared two children's institutions in England: the Foundling Home and the Nursery. Both provided well prepared food, adequate clothing and competent medical services. Both institutions were well staffed in terms of service and hygiene although the Fondling Home had the edge. Furthermore, the children entering the Foundling Home were brighter and had higher IQ's (124) than those in the Nursery (101.5) Despite the Foundling Home's emphasis on hygiene and precautions against contagious disease, 34 out of 91 children died within the two years of Spitz experiment. It seemed that the older the children got the more susceptible

they were to disease. Mental deterioration was evident too. By contrast the children in the Nursery had increased IQs from 101.5 to 105, they were all walking unassisted, and there were no epidemics or deaths during the experiment (Older, 1982). The critical difference in the two institutions was the presence of mothers in the Nursery. "Mothers" in the Nursery touched the children more than the staff of the Fondling Home. In Spitz's words, "The presence of a mother or her substitute is sufficient to compensate for all other deprivations" (Spitz, 1945). As an adult, the untouched child will become depressed and withdrawn; and the abused child will become an abusive parent or harmful to society. Examples of well-known adults who were mistreated as children and became killers are: Arthur Bremmer and Lee Harvey Oswald (Older, 1982).

Due to the amount of respect that the medical profession is accorded in this era, doctors have a very large influence on the way we interpret touch (Older, 1982). A survey done by Older (1982) found there were no intelligent discussions with regard to touch in any of the American medical libraries. The only real message that medical students receive about touch is to avoid it. Older suggests that touch is being confused with sex (Older, 1982). The bottom line is that adults learn to associate touch with many qualities other than healing; namely, sex and abuse (Older, 1982).

The concept of energy is based on Chinese medicine (Maynard, 1984). Energy travels in and around the body on pathways called meridians (Thie, 1976). The Chinese believe that the energy in these have two polarities called yin and yang.

Their positive and negative forces and their balance in the body are indicators of health and illness (Eisenberger, 1985). Energy that is unbalanced over a long period of time will affect

the organs and muscles associated with that meridian and eventually show up as a disease (Diamond, 1979).

Bulbrook (1984), has explored Therapeutic Touch (T.T.) - another vehicle for measuring energy in and around the body - with results that support this idea. That is, when people are suffering, or about to suffer a health problem, there is a marked difference in their energy field.

Studies have shown that characteristic physiological changes that take place during T.T. and these have been measured by researchers. For example, researchers measured a distinct rise in levels of oxygen carrying hemoglobin in patient's red blood cells. Ninety percent of patients showed signs of slower breathing, deep and audible sighs and a marked drop in the decibel level of the voice. In one study, researchers monitored four patients while Kreiger treated them. Three responses were evidenced: 1) a predominance of alpha brain waves producing relaxation (high-frequency beta waves signal our usual waking state); 2) skin temperature decreased; and 3) heart rate decreased (Kreiger, 1975). Because there were only four people taking part, it is difficult to say that the experiment was valid, in fact, the researchers admitted that these improvements could have been due to the "placebo effect".

In the context of self-healing, Thie (1987) said, "If a placebo effect is triggered by a treatment such as Touch for Health, it is effective". Because the healing power of belief in a treatment is as powerful as the treatment itself (Blair, 1988). Wagner (1985) suggests that TFH is a vehicle to access the "self-repair system" and that it is as important to discover the inner healing mechanism as it was to discover the nervous system and the immune system. Crockford (1987) suggests that the experimenter's bias while conducting an experiment, can determine its results. Grad, a biologist from McGill University, conducted a series of experiments in the 1960's which studied the effects of T.T. as a healing tool on rats. These

healing sessions were given by advocates and skeptics of T.T. to rats that had been cut. The advocate's rats started to heal the next day and completed the healing process faster than the other rats. The skeptic's rats took longer to heal and some even died (Maynard, 1984). Therefore, it is necessary for the person giving the treatment to believe in the practice and, "If the healer has no faith, then there is really no hope for a cure", says Grad (Maynard, 1984).

Surrogate testing is conducted in TFH and T.T. It works on the premise of energy transfer from one person to another. The human body is "a fine electrical conductor, the skin registers subtle emotional shifts and transmits them to others" (Montagu, 1986). For example, energy is transferred from an electrical wire to a human if there is a connection such as a kite string. When a human has been electrocuted and still in contact with the source of electrocution, another human being can also be electrocuted (Montagu, 1978).

T.T. measures energy by sensing it via the hands (Kreiger, 1975). There is a way to visibly measure the energy field and that is with Kirlian photography.

Kirlian photography, named after the Russian electrical technician Seymon Kirlian, a discovery which photographs energy fields of living things (Ferguson, 1984). In 1939 he began his experiments with a new found technology which visibly measured the energy field and its clarity and colour.

Kirlian's first experiments involved leaves of trees. He compared leaves from the same species of healthy and visibly diseased plants. The difference in their energy field was remarkable. The healthy plants had large bright energy fields and the diseased plants had faint thin energy fields (Ferguson, 1984). Thousands of photographs have been taken of fingertips which have revealed health conditions of humans. For example, a healthy doctor showed a

feeble energy field and shortly after developed jaundice. A person with a brain tumor showed a flat energy field (Ferguson, 1984).

Among the professionals, Kirlian photography and Therapeutic Touch are controversial as to the scientific validity and possible future use of both (Thie, Personal Communication, March 1991). At the same time many scientists around the world have a very positive attitude and think that Kirlian photography could find its use in medicine, dentistry, criminology, geology, agriculture, forensic medicine and psychic research (Bulbrook, 1984). Therapeutic Touch, on the other hand, is used mostly by nurses in a medical setting (Kreiger, 1975). Bennett, director of professional affairs for the Canadian Medical Association in 1984 said flatly: "I know nothing about T.T., I have never heard of it and I have difficulty accepting its veracity". Therapeutic Touch and Touch for Health have both been taught at the college level in Thunder Bay's Confederation College in 1986.

Energy Balance

The energy that is referred to throughout this study is known to the Chinese as chi or Qi; the Japanese as ki or qui; the Hindus as prana; and the Christians depict it as a halo. It is also referred to as "life force" and an "energy field" (Bulbrook, 1984).

There is a procedure in TFH called an energy balance which involves identifying where the blocks in the energy circuit or energy field are via muscle testing and then reinstating that part of the energy field (known as a meridian) to its fullest.

About 25 years ago a chiropractor by the name of Goodheart gave the name "Applied Kinesiology" to the approach of examining the body to determine muscle inhibition (Diamond, 1979). It seemed elementary and fundamental to the practice of healing; hence, "Applied Kinesiology" was born. What appeared to be a muscle spasm was not an overtight,

pathologically contracted muscle, but a normal muscle that did not have opposing muscles doing the necessary counter pull. By examining the patient for the inhibited muscle function, via muscle testing, and directing an appropriate correction to that area, rapid changes in the body posture were made. Postural analysis, took on much more importance as changes in the posture appeared almost instantaneously. The reaction of the patient knowing that his body was responding in a very rapid way, caused great enthusiasm on the part of both practitioners and the patients (Thie, 1988). "It is an 'ah-ha' experience and it is only through this kind of experience that we arrive at sudden truths" (Diamond, 1979). Jacobs (1988), a practicing physician, had an 'ah-ha' experience with TFH in his traditional medical practice which changed his approach with patients. Here is his story.

Then one day - it had to happen sooner or later. In comes L.D., nice lady about forty - pain in the right shoulder - really hurting. Hurt so bad she kept her arm to the side - pale - sweaty - no sleep - nauseated. Exam diagnosis - inflammation of deltoid bursae - treatment with inflammatory oral drugs - injection of steroid into bursae - analgesics - pain pills, sleeping pills.

Patient returns next day, no improvement. Nice lady in pain, sweaty, pale weak- what to do? Pass the buck- send her to orthopedic surgeon? (diagnosis really not in doubt). I know what he will do - shower her with codeine - use physiotherapy, prolonged course - eventually it will pass - perhaps residual loss of range of motion, but she will make it. (pp. 56)

Warren Jacobs proceeded to ask his patient if she knew anything about Chinese medicine her response - "Do anything!!" He then proceeded to do a TFHEB from the TFH manual. When he was complete he asked his patient to move her arm. She said "I can't!", "Try", he said. She put her arms to the side as she sat on the exam table and very, very slowly she raised

her arms over her head until her hands touched. She was amazed and so was he. She jumped off the table, thanked him and strode out of the room. He was left with two truths. Just as scientists accepted the two truths about the particle theory of light and the quantum theory, where one theory explained one phenomena of light and the second another phenomena (Jacobs, 1988), Jacobs was left with an "ah ha" experience which changed the approach to his medical practice (Jacobs, 1988). Countless anecdotal stories like this one exist as evidence for the effectiveness of TFH (Thie, Personal Communication, March 1991).

During Goodheart's years of working with the body, he had discovered that each large muscle relates to a body organ (Diamond, 1979). A switched off response in a muscle usually means there is a problem at the energy level in the associated organ. By switching on the muscle in a variety of ways, he was able to improve the functioning of the organ as well. Applied Kinesiology with muscle testing as an integral part of the system, has become a system of biofeedback for the body itself (Diamond, 1979).

Muscle Testing

An experiment conducted by Dr. Kenney, Clemens and Forsythe studied the reliability of muscle testing as it applied to nutritional analysis. There were three different testers testing the same subjects. They used both muscle testing and traditional nutritional analysis techniques to determine whether or not the Applied Kinesiologists were "accurate" in their nutritional analysis. The results indicated that muscle testing was as valid as guessing at the results. Muscle testing showed up the same in 12 of 44 among the three testers.

There was no significance when comparing traditional analysis to muscle testing results (Kenney, Clemens and Forsythe, 1988).

One missing factor in this experiment was the lack of observation in the energy patterns. There was no observation in the correlation between the effects of traditional treatment of the energy field or the effects of holistic alternatives on the energy field. The emphasis in this experiment was to see if muscle testing was an accurate testing method for the analysis of nutrients needed in the body when in actual fact it was measuring the nutrients needed by the energy field. The question therefore is; how does muscle testing assist in analyzing patterns in the energy field; hence, determining nutritional deficits at the first line of defence instead of the last line which is the effects on the body? (Chopra, 1991). Analyzing the nutritional deficits when they show up in the body is distinct and separate from testing the energy field via muscle testing. The medical analysis in the experiment by Kenney, Clemens and Forsythe failed to observe the energy changes and it also assumed that the muscle testing was measuring immediate nutritional needs of the blood system rather than the nutritional supplements that reinstated the energy field which in tum would affect the body. The experiment by Kenney, Clemens and Forsythe is not a valid study of muscle testing as it applies to nutritional analysis because they are analyzing two different criteria; energy field and blood system.

As suggested earlier, muscle testing is a tool for determining whether or not there is energy in its associated meridian. Therefore muscle and meridian will be used interchanged throughout this write-up.

Muscle testing involves two or more people; one being the tester and one the subject (Scott, 1988). When there is a third person involved they are referred to as a surrogate (Scott, 1988). Because TFH is a self-help technique, the subject is responsible for determining

whether a muscle is switched on or not. For the purpose of this experiment, the tester is responsible for determining whether the muscle was switched on or off.

A switched on muscle is indicated by a muscle, testing firm or solid against the testers gradual push. To get a sense of the kind of pressure the tester exerts, it is the equivalent to a gradual push of 8-10 lbs. pressure for 2-4 seconds on the bathroom scales. If that pressure is exerted on a wall, it will be a good demonstration of a switched on muscle. If exerted on a door that is being supported between the feet, it will give the sensation of a switched off muscle. It feels "wobbly" or "mushy". Other sensations that will indicate a switched off muscle are: "limp", "trembling", "wavy" and "strong with the subject holding his breath".

Muscle testing serves as a biofeedback mechanism for the body/brain connection (Diamond, 1979). In the context of computers, the muscles of the body act as connectors to the brain in the same way that the computer wires act as a connection from the keyboard to the screen. Muscle testing demonstrates immediate results as does the computer screen. This biofeedback system is the essence of the TFHEB. For example, if the deltoid is muscle tested and found to be switched off, one of the switching on techniques such as neurolymphatic massage points are used to reinstate the energy. The muscle test is then done again. If the muscle is switched on, test the next muscle. If it is still switched off use another energy technique until it becomes switched on.

Muscle testing can be used in many settings to determine whether or not something causes an energy disturbance. For example, the chair that you sit in during class can be tested to see if it causes energy disturbance. The first step in this procedure is to test for a switched on muscle, then sit in the chair and re-test. If the muscle remains switched on then the chair supports your posture and if it switches off your energy is being disturbed when you sit in that

chair. A few years ago this experimenter made a decision on a pair of aerobic shoes by using this technique. A switched on muscle was established then a pair of shoes were tried on and the muscle test done again. The same thing was done for the second pair of shoes. One of the pairs disturbed the energy and therefore, "switched me off'. Consequently the shoes that supported the energy were purchased.

At this point it is illegal for just anyone to diagnose another person and prescribe a "treatment" using TFH. That is why TFH was set up in an educational model and is taught that way (Green, 1987).

People who use muscle testing and TFH are nurses, senior health care assistants, chiropractors, naturopaths, massage therapists, TFH students for personal use and M.D.s in the United States of America. There is only a small part of the population that have a "licence to touch" ; they are doctors, massage therapists, physiotherapists, chiropractors and naturopaths (Green, 1987). They can use muscle testing as a diagnostic tool to support what they already suspect as a professional. The rest of the population need to give permission to the tester to assist them in a diagnosis of their own bodies the therefore need to be knowledgeable in TFH.

Some Naturopaths use muscle testing extensively to test for and prescribe supplements. The premise here is that if the energy is balanced to begin with, anything that causes a disturbance and hence switch off muscles is not supporting the body and is not prescribed (Wales, Personal Communication, 1990). A switched off muscle that is reinstated in the presence of a supplement is one possibility for prescription. After all the supplements that switch on the energy are found, they are tested for priority and in combination. It would not

be acceptable to have two supplements which work well by themselves and switch the body off when put with something else.

Touch for Health Energy Balancing (TFHEB)

The following is this experimenter's analogy of what happens in the body in the context of the body's energy field.

Imagine the body as a house. The meridians of the body represent the wires of the house connecting one energy pathway to another. A change in the energy field represents the switch in the house. When the house is fully lit up, the wires are fully connected, all switches are on and its energy is at its fullest. When the body has no disturbances, its meridians are fully connected and energy is at its fullest. When the lights go out in the house it is because the switch has been turned off, the bulb has burnt out or there is a short in the energy circuit. When the energy in the body goes out it is because there is a disturbance in an energy pathway (meridian) and it has been switched off. As in the house, unless we can determine which energy pathway is affected, we will not know where to go in the house or in the body to tum it back on. The fuse box acts as the source for determining which part of the house to look in for the disturbance. The other way is to walk outside and physically look to see where the lights are out. In the body one can physically look at the body and determine where energy is missing by examining the posture (Thie, 1976).

In the TFHEB muscle testing is used to determine which part of the energy field is switched off or blocked. When that is determined, the energy is either reinstated right away or muscle testing is continued for the 14 meridians to determine a faster solution. For example, if the electricity goes out in the house in all but one room, one can either change all the lightbulbs to see if it corrects the problem or go to the fuse box to see where to start. The body

is the same. It is faster to test all the meridians via muscle testing first then reinstate one or two of them at the source of the energy block, rather than reinstate them one at a time. The TFHEB is one way to reconnect all the meridians and complete the energy circuit.

The tester makes a list of the 14 meridians in the order they exist in the body (see page 19 under Meridian Trace and Appendix A). Next, she executes muscle tests for the 14 meridians. She then makes a note beside the switched off meridians. When the 14 muscle tests are complete, she determines which meridian to switch on first by referring to the list of marked meridians. She switches on that muscle which is at the beginning of the largest number of switched off muscles. For example, the heart, small intestine, bladder, kidney, lung and large intestine meridians are all switched off. The largest group of switched off muscles starts with the heart; therefore, she would switch the heart meridian on first and retest to be sure the switching on technique worked. At this point, the rest of the meridians should be all switched on too. If not, she would switch them on one at a time. There are many ways to switch on muscles; neurolymphatic massage points, neurovascular holding points, meridian trace, and origin/insertion technique.

Neurolymphatic Massage Points

There are twice as many lymph and lymph vessels in the body as there are blood and blood vessels (Thie, 1976). The muscles act as pumps for the lymph and the lymph movement allows the muscles to function optimally (Scott, 1988). Each muscle has a massage point specific to it. For example, the anterior deltoid massage points are between the 3rd and 4th rib in the front and the 3rd and 4th vertebrae in back on either side of the spine (Thie, 1976).

Neurovascular Holding Points

Terrence Bennett spent the better half of his life discovering the neurovascular holding points as they associate to the meridians. He did this via radiation and x-rays and he died prematurely from overexposure to radiation (Thie, Personal Communication, March 1991). Neurovascular Holding Points are found on the head and are to be gently held for up to 10 seconds. There are generally two points for each meridian, one on either side of the head. When the pulses become synchronized the meridian is switched on (Thie, 1976).

Meridian Trace

A meridian is an energy pathway which was named in association with an organ (Diamond, 1979). The energy field is broken down into 14 meridians. Each meridian is found on both sides of the body except the centre and governing meridians which are paired up by being at either sides of the body; that is, front and back (Appendix B).

Meridians also have one or more muscles associated with it. The meridians provide the pathway for one continuous and flowing energy circuit around and through the body. Their meridian trace is performed by tracing the fingertips of the hand in the direction of a meridian associated with a switched off muscle. For example, the anterior deltoid muscle is associated with the gall bladder meridian. It runs down the back from the eyebrows to the feet. The meridians flow in sequence in accordance to the energy field (Thie, 1976). The following is a list of the meridians in their sequential order, from start to finish (see Appendix A for details).

MERIDIAN	START	FINISH
Heart	body	fingers
Small Intestine	fingers	face
Bladder	face	feet
Kidney	feet	body
Circulation-sex	body	fingers
Triple warmer	fingers	face
Gall bladder	face	feet
Liver	feet	body
Lung	body	fingers
Large Intestine	fingers	face
Stomach	face	feet
Spleen	Feet	body

If one of the organs were being continuously over-stimulated through diet or pollution, the disturbance would continuously block the energy field in the same place therefore placing undue stress on that organ and hence the possibility of disease (McGarey, 1988).

Origin/Insertion Technique

Origin/Insertion Technique is not an energy technique but rather a muscle stimulating technique which wakes up the muscle and switches it on. Switching on the muscle is achieved by signaling the golgi-tendon apparatus which then send a message to the brain via neuro-transmitters (Thie, 1976).

Muscle Balance

Muscle balance and energy balance are synonymous in TFH and one affects the other (Thie, 1988). The nature of antagonistic muscles with their spindle cell and golgi-tendon organ, set up the pattern for contraction and extension. Cuillo and Zarins (1984) were able to record the cycles of reflexes which allow muscles to function on an electromyography machine. They go on to explain that muscles should be in balance to prevent injury and increase performance. A muscle can store energy in its stretched phase and if, for example, if there is a muscle imbalance between the quadricep and hamstring muscles for a competitive sprinter who is in the starting blocks, the energy in the stretched quadricep may over pull and rupture the antagonistic hamstring. If the two muscles are not of equal strength and if the energy generated in contraction is at a higher level than the antagonistic tendons, the imbalance may lead to strain within the antagonistic fibers (Cuillo and Zarins, 1984). Fred Stoot, a physiotherapist in Thunder Bay, suggests stretching before exercise will minimize the chance of injury by "maintaining a balanced relationship between muscle groups on opposite sides of the body; e.g. quadricep and hamstring" (Stoot, 1986). Improper training and fatigue can lead to imbalances and place the athlete at risk of injury to muscles. Not only does balance prevent injury, it increases efficiency in the muscle to allow for better performance. Muscle flexibility/elasticity is found to play a dominant role at peak levels of performance (Cuillo and Zarins, 1984).

Touch, Applied Kinesiology, energy and balance have all been reviewed to assist in the discovery of the value of TFH. The extent to which TFH is used will be dependent on the continued support of its value and the continued research into its validity (Harnack, 1988). The purpose of this experiment is to determine whether or not the TFHEB alters the strength ratio of quadricep and hamstring muscles.

Chapter 2 - Methods and Procedures

Hypothesis

The hypothesis is to determine whether or not Touch for Health Energy Balance (TFHEB) increases strength as it pertains to the quadricep and hamstring muscles.

Subjects

The subjects were randomly selected and were Physical Education students from Lakehead University who were active in the program in 1985. They were approached by the experimenter and asked to participate. The experimental group consisted of 22 males and females (Ex= 22). The control group consisted of 14 males and females (Ctr = 14). The age range was 18 - 24 years. The control group was smaller due to subject mortality.

Equipment

The Cybex® II, Division of Lumex, Inc. (Appendix C) was used to measure foot pounds of torque for the quadricep and hamstring muscles. Peak torque for both muscles were recorded at two speeds: 60°/second (measures strength) and 180°/second (measures power). Although only one speed (180°/second) was used for the data.

Procedure

Subjects sat on a table equipped with a backrest and handgrips. The angle between the seat and backrest was consistent for both pre-test and post-test. A velcro strap, 7.6cm wide, was placed over the thigh close to the knee. The arm of the Cybex@ II was placed on the outside of the leg and had an extension attached to the arm where the ankle is strapped. The arm could be

adjusted to the length of the subject's leg and a note of its length was documented for the post-test.

Each subject began the testing procedure with three repetitions to warm up the knee. They were instructed to push up and pull back on the arm of the Cybex@ IL.

Following the warm up the subjects performed two sets of three repetitions working the quadricep (Q) and hamstring (H) consecutively at 60°/second. A change of speed to 180°/second was then made. The subjects were instructed to "get a feel for the new setting" with five warm ups. They were then instructed to move their legs up and back as hard and as fast as they could, four times.

The experimental group received the TFHEB before their post-test.

Procedure for Touch for Health Energy Balance (TFHEB)

In order to keep muscle testing consistent, surrogate testing was implemented. Surrogate testing involves a third person called a surrogate tester and is used when the subject is unable to feel for himself the results of muscle testing. It works on the premise that the human body is a conductor of energy; therefore, testing the third party will achieve the same results as testing the subject directly (Montagu, 1986).

The surrogate tester, a nurse and certified TFH Instructor, from the Gleeson Clinic in Thunder Bay, was balanced. The subject was then balanced using the surrogate tester.

The subject is face-up on the massage table. The surrogate tester is face-up on another massage table next to the subject with her hand touching the subject's shoulder. Muscle testing is then performed on the surrogate to indicate imbalances in the meridians. Imbalances are found via the 14-muscles that are associated with the 14-meridians. When the muscle

tested switched off, it was noted on a record sheet as an unbalanced muscle/meridian. Touch techniques such as neurolymphatic massage points, neurovascular holding points, meridian traces and Origin/ Insertion techniques were then used to reinstate the energy to that meridian and therefore balance the energy in the body.

Documentation

All subjects were tested one week after pre-testing and at that time the experimental group was exposed to the TFHEB before their post-test.

Energy imbalances were recorded on a 5-element chart in order to know where to reinstate the energy for balance (see Appendix D).

Notes were made as to the length of the Cybex@ II arm and the number of cushions that were used behind the of some subject's back . The cushion is a firm padded board which is a feature of the Cybex@ II and is used for those whose upper leg (groin to knee) is not long enough to create a 90° angle from the bench to the floor.

Data Analysis

A one tailed t-test with an alpha level of .05 was used to determine the significance of TFHEB on Q/H strength and ratio.

Chapter 3 – Results of the Experiment

The results of this experiment using the Touch for Health Energy Balance (TFHEB) for the post test ($p < .05$) with the experimental group, demonstrated the following: Increased peak torque of the quadricep (Q) muscle significantly ($p < .05$) from that of the pre-test (Table 1); increased peak torque of the hamstring (H) muscle although not significantly from that of the pre-test (Table 1); and decreased the ratio between the Q and H significantly ($p < .05$) resulting in the ratio closer to 1:1 (Table 2).

Table 1

Peak Torque at 180° for Quadricep and Hamstring Muscles of the Control and Experimental Groups

POWER

	Control			Experimental		
GROUP	X	s	t	X	s	t
Rapid dynamic tension (180°/sec)						
Quadricep	-5.87	11.65	-1.812	8.05	11.52	3.210*
Hamstring	4.5	10.06	1.613	1.14	7.45	.701

*Statistically significant at $p \leq .01$

Table 2

Peak Torque at 180° for Quadricep and Hamstring Muscles of the Control and Experimental Groups

POWER

	Control				Experimental			
GROUP	X	s	r	t	X	s	r	t
Rapid dynamic tension (180°/sec)								
Q/H Ratio	-.026	.129	-.722	NS	.102	.023	20.8	2.518*

Chapter 4 - Discussion

There are no previous studies in the area of energy balancing as it applies to muscle strength and ratio. Therefore, it is possible that the results of this experiment could be significant to not only the Physical Education students, who demonstrate a specific population, but for all other populations as well.

The results indicate that the ratio between the quadricep and hamstring muscles (Q & H) decreased therefore bringing the ratio closer to one. The results of this experiment may have some value to athletes due to the nature of the body and athletic injury. Having antagonistic muscles at a ratio of 1:1 means that there is less chance of injury (Stoot, 1986). With regards to this experiment, the Q and H directly affect health of the knee joint.

Campbell and Glenn (1982) concluded in their study of rehabilitation programs for various knee injuries that in rehabilitating muscles of the knee, attention to the ratio between Q & H muscle torque needs to be considered. In this experiment balance in muscles was demonstrated by the results and it was achieved by Touch for Health Energy Balance (TFHEB). The TFHEB illustrated that balance between antagonistic muscles is possible. The results of this experiment suggest that the TFHEB decreased the ratio therefore allowing the antagonistic muscles to work at equal strength and hence prevent injury (Cuillo and Zarins, 1984).

The Cybex II® was used because of its noted reliability. Other strength measuring machines and techniques could have been used such as grip strength but the Cybex II® was readily available for use.

Surrogate testing was used instead of subject interpreted muscle testing in order to control the interpretation of the muscle tests. It would have been appropriate however, to teach the

subjects in a workshop setting to distinguish the differences between switched on and switched off muscles for themselves. After such an education these subjects could reliably determine their own muscle test response and would be totally responsible for determining the state of their body balance via muscle testing and participate in experiment with the reliability needed. Because learning distinctions in muscle test responses is a process that takes time, it was easier to use surrogate testing and subjects did not determine their own energy balance.

Balancing energy is a relatively new phenomenon in the context of the 20th Century (Lubecki, 1985). In the ancient Chinese times, energy balance was an important part of the health picture. Currently energy balance it beginning to re-emerge into health practices.

Thanks to the television there has been a increased awareness of the importance of health and well-being through diet and exercise. When people begin to inquire about easy and inexpensive ways to increase vitality and overall health in their lifestyle, they may re discover their own body energy and ways to tap into it and alter it.

Posture is a key element to self-discovery and a healthy lifestyle (Perry, 1982). Perry (1982), has been involved in Touch for Health since its onset in 1976. He says that posture is a very important element to sport and athletics and teaches how to assure the most efficient "biomechanical postural positions possible to reduce stress and therefore, in reality give them the key to their own health". Chiropractors are taught in their course of study that when the spine is misaligned energy can be disrupted, thereby allowing health problems to set in. It is the chiropractors job to recognize and reinstate the alignment of the spine and thereby facilitate energy flow. Spinal alignment is sometimes the only technique used by chiropractors; however, other chiropractors use a variety of techniques including Touch for Health techniques (Gleeson, Personal Communication, May 1991). Touch for Health

demonstrates, in this experiment, only two muscles being balanced yet visual observation before and after a TFHEB will show posture improvements in the following areas: head position - forward or backwards on the neck; shoulders - even shoulder height and blades; upper back - roundness; hip bones - even hip height; lower back - sway back or straight; and hand position - hands will be forward on the quadricep if upper back and shoulders are too rounded (Thie, 1976). There is no empirical data on the effects of TFHEB on posture; yet, time and time again there are noticeable changes in posture after a TFHEB is received. If people can learn to feel the difference between good posture and poor posture, they may be able to retrain their brain to accept "good" posture as being more comfortable and ultimately keep their body free from energy disturbances that could cause disease.

The importance of posture in athletics is illustrated by Joe Montana of the Miami Dolphins who recovered from back surgery and returned to his professional sport of football in record time (Television Documentary, 1989). His secret was learning to maintain a posture that would benefit his health. He learned to fall, throw the football and run while all the time projecting/maintaining balance and posture. If TFHEB allows people to experience their posture as it is and how it could be and teaches people techniques to maintain balance and posture, it may prove to play a significant role in teaching people about their health and well-being.

Touch is a vital need of humans (Montagu, 1986) and it is reasonable to suggest that muscle balance between Q & H in this experiment was due to the touch received during a TFHEB rather than the technique itself. Further studies could reveal whether or not touch has a significant effect on muscle balance.

The energy field can be tested for blockages by muscle testing. The issue of the effects of TFHEB suggests that an unseen energy is present. The visibility of this energy may add to the evidence of its existence. There are two devices to date that could make this possible; the Thermal Camera and Kirlian Photography.

Energy is heat and heat is energy therefore it would be reasonable to suggest that TFHEB could affect the heat of the body and if that is the case then a thermal camera could monitor, the effects of TFHEB, in colour, on the changes in body energy.

Kirlian photography (KP) also allows the body's energy to be visible with the naked eye. KP was first used with leaves. Live ones would have vibrant energy around them and the dead ones would have nothing around them (Ferguson, 1984). Although KP for diagnosis is controversial, there is no controversy about the energy it exposes. People like Dr. Jan de Vries (1990) have learned to use KP to diagnose and successfully treat people with pre-cancerous conditions and bowel problems. Others have discovered that certain illness will have a particular pattern in their energy field and therefore when that pattern shows up on a supposedly healthy individual, the patient is diagnosed and treated promptly and appropriately (Bulbrook, 1984). A good comparison to understanding KP is the X-ray in the medical profession. When medical doctors are trained to read X-rays they learn what to look for and how to distinguish the details. KP is the same in that respect.

Where it differs is in the process of exposure and its consistency. Until there is a reliable way to have the picture process consistent; it will continue to be controversial.

The use of the Cybex@ II allowed this experiment to link muscle testing to muscle strength. The hypothesis stated that this experiment was conducted to determine whether or

not Touch for Health Energy Balance (TFHEB) would increase strength as it pertained to the quadricep and hamstring muscles. The results illustrate that the quadricep muscle significantly decreased in strength and the hamstring increased in strength. Therefore, the hypothesis was only partially proven correct. What is more obvious and important is that the two opposing muscles work together and the ratio between them is significantly closer to a 1:1 ratio.

During the TFHEB procedure, the subjects were observed as having varied reactions. They were skeptical yet curious. Because a surrogate tester was used to maintain the consistency for the muscle test results, the subjects did not directly feel the muscle test during the experiment. The balancing techniques such as neurolymphatic massage points received great compliments and reactions such as, "I'm tingling all over!" The TFHEB using a surrogate tester picqued the subject's interest to a point where they requested further knowledge and a "hands-on" demonstration / experience with muscle testing. Their reaction was varied; some were skeptical, and some were truly amazed at how the muscle test response changed. They asked questions throughout the experiment and most of the subjects were glad they participated and experienced Touch for Health.

Touch, balance and energy are all important to vitality. This experiment illustrated that TFHEB has a positive effect on the balance of antagonistic muscles Q & H. There may be other benefits to TFHEB but more research is needed to ascertain the specifics of what that may be.

Their response again was varied, some skeptical and some truly amazed at the procedure where touching in specific locations changed the muscle response.

Touch, balance and energy are all important to vitality. This experiment illustrated that TFHEB has a positive effect on the balance of antagonistic muscles Q & H. There may be other benefits to TFHEB but more research is needed to ascertain the specifics of what that may be.

Chapter 5 - Summary, Conclusions and Recommendations

Summary

The current experiment was conducted to determine if there was a significance of Touch for Health Energy Balancing (TFHEB) on the strength and ratio of the quadricep and hamstring muscles.

Subjects were male and female volunteers currently enrolled in the Physical Education program at Lakehead University in 1985. They were randomly assigned to the control or the experimental group.

The distinction between the two groups was the application of the TFHEB received by the experimental group only. Both groups performed strength tests on the Cybex II®. Thereafter the ratio between the two muscles was determined.

The experiment consisted of a pre-test and post-test for both the control and experimental groups. Before the experimental group performed the post-test, they were subject to a TFHEB. The TFHEB is a technique by which the unseen energy around the body (energy field) is tested via muscle testing for disturbances and then by applying touch techniques, the energy is reinstated to allow for a complete energy circuit throughout the body.

Data was analyzed using a one tailed t-test with alpha levels of both .05 and .01. Charts were used to illustrate the findings.

Conclusions

The results of this experiment indicate that the TFHEB makes a difference to the strength and ratio of the quadricep and hamstring muscles. The hamstring muscle increased in strength

although not significantly. The quadricep muscle decreased in strength significantly and the ratio between the quadricep and hamstring muscles decreased significantly.

Recommendations

There are a series of questions that arise from an experiment that includes an unseen element such as human energy and an observable element such as strength seen when using the Cybex II®.

Further research in this area would be beneficial while observing the following recommendations:

1. Extend the experiment to include populations other than physical education students to determine if the same results would occur in other populations.
2. Allow and schedule time enough to decrease or eliminate subject mortality. The one week time frame between pre and post-testing is appropriate and having more one week periods would allow time to acquire more subjects if needed.
3. Expand the research to include effects of energy balance on other antagonistic muscle groups such as biceps versus triceps; neck flexors vs extensors; or sacrospinalis vs lateral stomach (abdominals)..
4. Use a Thermal Camera, used in hospitals, to determine the effects of TFHEB on the heat patterns of human energy.
5. Use Kirlian Photography in conjunction with TFHEB to determine the visual distinctions for balance and possibly to determine the reliability of Kirlian Photography.
6. Measure strength after other forms of touch to eliminate the possibility of touch being the variable in the results of this experiment.

7. Let the subjects determine their own balance using the TFH techniques to eliminate tester bias.

8. Determine whether or not subjects are reliable at determining their own body balance by comparing two groups: one group learning the distinctions of muscle response and balance during a weekend workshop and a group learning via on-the-spot training.

9. Use TFHEB as a facilitating technique in rehabilitation programs for faster recovery after, for example, a knee injury.

10. TFHEB is known to improve posture and bring postural awareness to those people who participate in TFH workshops. An experiment measuring the criteria for posture before and after a TFHEB could bring a scientific base to the observation.

11. A study using TFHEB as a contributor to performance improvement would add a dimension to the value in TFHEB for athletes. For example, use TFHEB with swimmers to determine whether or not their speed and endurance improved.

12. In recognizing the significance of this experiment and the limited scientific data in this area, further experiments would only shed light on the role of energy and energy balancing for athletes and the general public.

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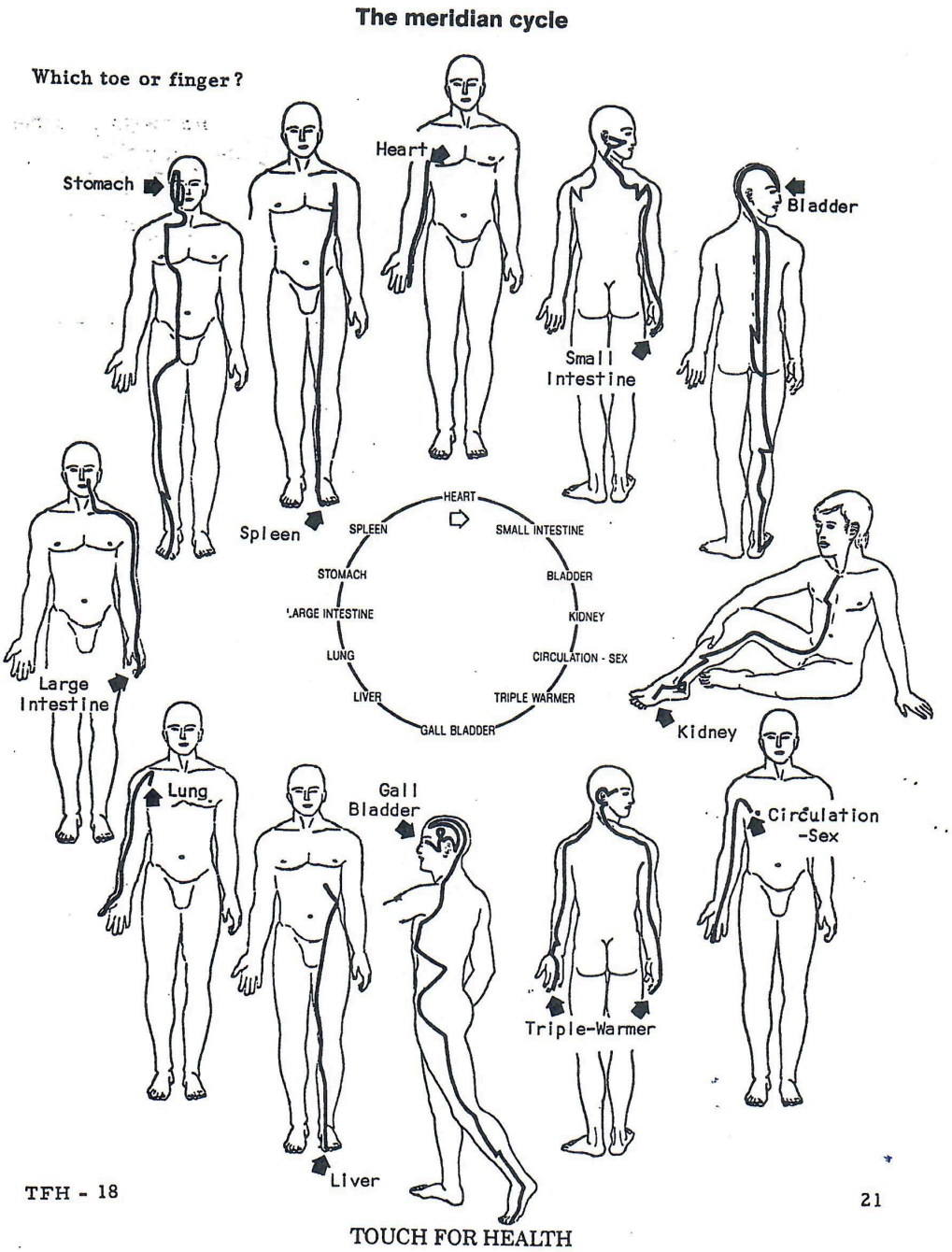
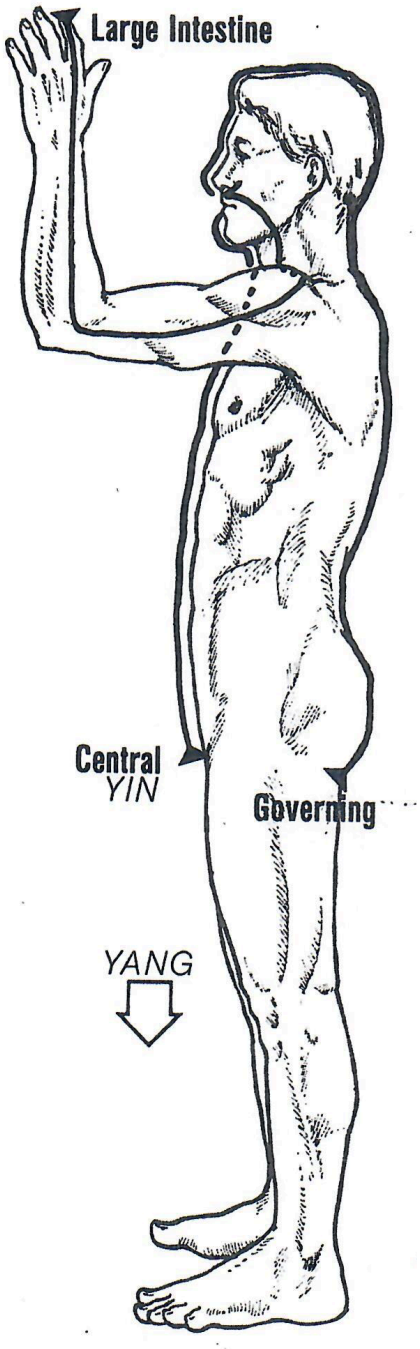
Appendices

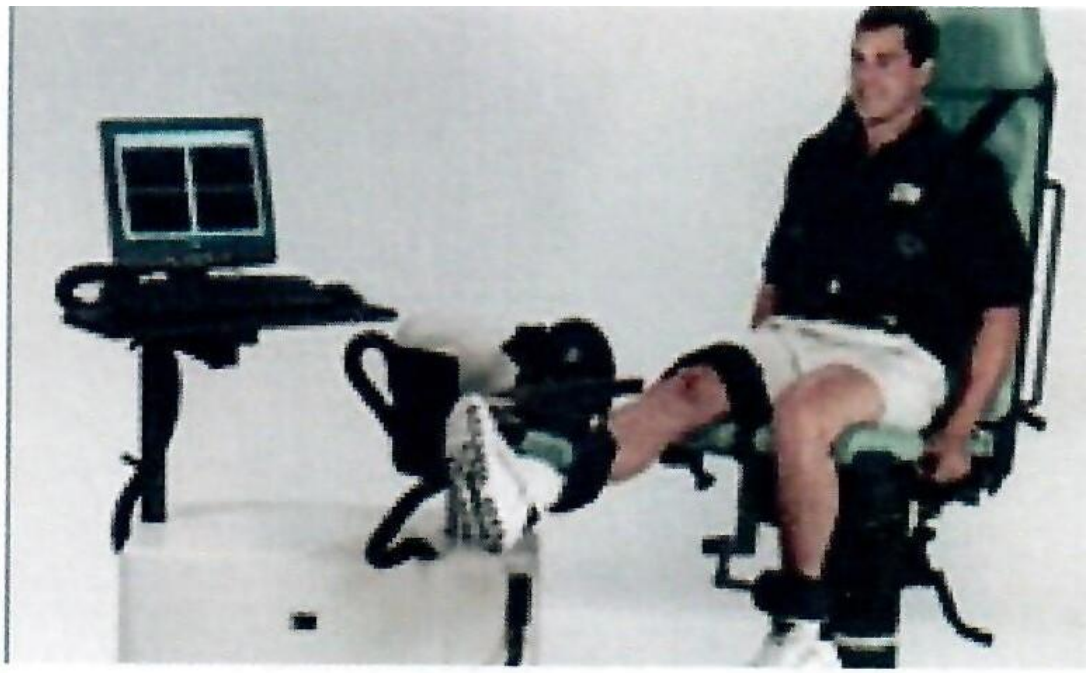
APPENDIX A

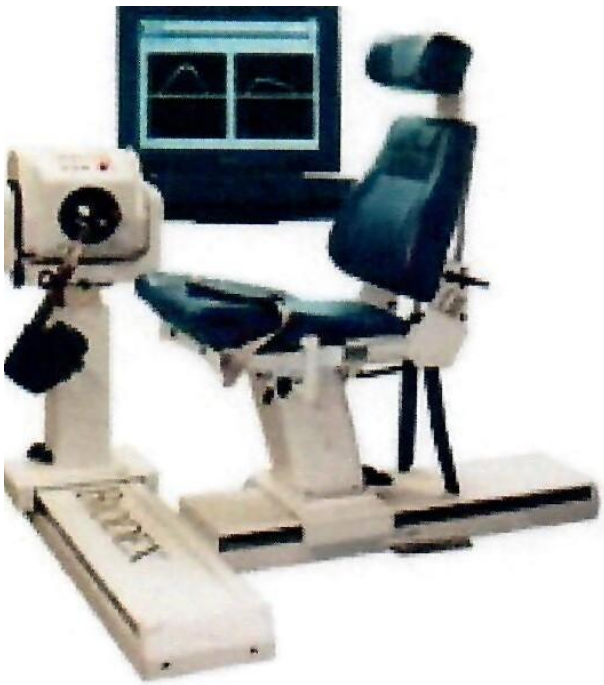

The meridian cycle
Which toe or finger?
Stomach
Heart
Bladder
Small Intestine
Spleen
HEART
SPLEEN
SMALL INTESTINE
STOMACH
BLADDER
LARGE INTESTINE
KIDNEY
LUNG
CIRCULATION - SEX
LIVER
TRIPLE WARMER
GALL BLADDER
Large Intestine
Kidney
Lung
Gall Bladder
Circulation -Sex
Triple-Warmer
Liver
TFH - 18
21
TOUCH FOR HEALTH

APPENDIX B



APPENDIX C





APPENDIX D

NAME _____ DATE _____

DOMINANT LEG _____