

**Zhan
Zhuang
Standing
Pole**

Standing Pole - Zhan Zhuang.

Let us now take a brief look at the origins and development of the form of qigong on which we are concentrating in this work, zhan Zhuang or "Standing Pole" exercises. Unfortunately, there was very little reliable information on the subject until recent times. Hence, much of what follows is only conjecture. Strangely enough, what seems to be the first reference to the practice appears at a very early time. In the "Plain Questions" section of The Inner Classic of the Yellow Emperor (c. 3rd century BC) we read that the ancients would support Heaven and Earth, taking hold of Yin and Yang, breathing the air of vitality (jing qi), standing alone guarding their spirit (shen), the muscles as one.

This passage, though clearly open to interpretation, strongly suggests the practice of a static standing exercise to nurture tranquillity and health. The reference in the Inner Classic to a "tortoise swallowing" method quoted above and one or two of the diagrams on the "Dao-yin Chart" (particularly No.9) suggest a static standing posture but clearly with respiration control as the "exercise" concerned. Indeed, though standing postures were predominant amongst these early Systems of dao-yin, if they were static it was purely as a preparation for practice or as a convenient posture for respiration exercises. There seems to be no further indication of a distinct tradition of assuming a static posture for some period of time as a form of exercise in itself. The practice of such an exercise, Zhan zhuang, is most commonly associated with the martial arts, especially the Shao Lin tradition. Though its dates of origin are uncertain, it was certainly fairly common by the early Qing Dynasty (17th century) in various Shao Lin styles then rapidly disseminating across China. In fact, the term "Standing Pole" may not at first have been applied to the practice of static standing posture. There was a mode of training at the Shao Lin Monastery involving the practice of technique and combat on thick wooden stakes embedded in the ground. This method was also employed by the "Plum Blossom" style of boxing, reputedly created by Chan Master Liao jing' at White Horse Monastery, Luoyang, at the start of the Qing Dynasty. Thus the term may have originally been applied to such a practice. However, maintenance of a single posture for long period was an established part of Shao Lin training, a "basic skills exercise." It was especially popular in the Hong Style of Southern Shao Lin, the martial arts system practiced by the secret Heaven and Earth Society (Tian Di Hui) in Southern China. The "Secret Exposition on Shaolin Boxing" (a document expounding the practice of Hong-Style Shao Lin boxing and qigong written at the turn of the last century) calls such an exercise di pans (earth basin). It was essentially a low squatting "horse-stance" posture, supposedly held for as long as one to two hours, and practiced until "one no longer feels discomfort or fatigue." The "Secret Exposition" lists three forms, though they differ only in the angle of the feet. The fists were kept tucked in by the ribs. Its aim was purely to strengthen the lower limbs, and make the feet very firm,

so that the body could become low and well balanced, non top heavy. and easily bowled over. The work points out that there are also higher half-squat and T-step forms, but that these are only used in combat. Many technique of striking and qigong exercises would be practiced in this posture once proficiency had been reached. Though not quite as popular in the Northern schools, this was called simply "horse-stance" or "standing pole." Its form was essentially the same, though sometimes the arm posture varied: they might be stretched outwards or upwards. This form of exercise has now been adopted by many styles, but it really has little bearing on our Standing Pole Exercises and the "art of nourishing life." It is in no way connected with the principles of relaxation, meditation exercise and "seeking strength from non-exertion." Much more significant is the "San Ti Shi" (three body stance) standing exercise of Xing Yi Quan, "Form and Will Boxing (also called "Heart/Mind and Will (Xin Yi) Boxing" and "Six Conformations (Liu He) Form and Will Boxing"). Though the origins of this style again are obscure, its founder was probably one Ji Ji Ke, from Shanxi Province, who lived at the start of the Qing Dynasty. The "San Ti Shi" was the most fundamental and essential of practice methods Xing Yi Quan boxing, based on the "Six Conformations"; mind (xing) and will (yi), breath and strength, muscles and bones, hands and feet, elbows and knees, shoulders and hips. Its precise sources are unknown, though it was apparently the first form to combine the principles of the relaxed nurturing of strength and mental and physical coordination in such a way. These seem to have constituted the mainstream of such techniques until Wang Xiangzhai developed the "Standing Pole Exercises" in this century. There are, however, hints of other forms. The qigong and boxing style of the Ma Family, a branch of the Northern Shaolin tradition, has a series of standing pole forms. The two major ones are clearly the Shaolin, "horse stance" and an adoption of the "San Ti Shi". However, Ma Chun present-day master of the style, claims the others to be adapted from the "Great Hand-print cultivation method of Lama Buddhism, as well as exercises from the martial arts system of the Kaiyuan Monastery at Mt. Emei in Sichuan Province. His first of three "Lama" postures, called simply "Great Handprint" is most interesting and basically fits the principles for the relaxed nurturing of strength. The other two are less appropriate. Unfortunately, there is no other indication of any such a tradition of "standing pole" exercise of the Lama School from any other source yet available to shed further light on the matter. Mt. Emei in Sichuan has been a Buddhist and Taoist center for centuries. Several martial arts traditions are associated with it, most especially the tradition of the presence of a hidden branch of the Shaolin Monastery there. There is, however, no sign of any Standing Pole Exercises in present-day forms, though an "Emei Twelve Standing-Form Exercise" exists, but this is just a rather strenuous system of calisthenics daoyin exercises. "Form and Will Boxing" belongs to the so-called "Internal School" of martial arts which also includes Tai Ji Quan, Ba Gua Quan (Eight Trigrams Boxing), Wu Dang Quan and others. It is uncertain whether any of these originally embraced the practice of Standing-Pole techniques. Tai Ji Quan

today has a posture associated with it very similar to Wang Xiangzhai's "All Round Stance" except that the arms are held out as if embracing a tree. However, there is no indication in early manuals on Tai Ji Quan to suggest that it was practiced. This posture is now very popular in many other styles of qigong. It may be that the stance developed independently in the past few hundred years and thus influenced Wang Xiangzhai, though there is no evidence to suggest its early existence or common practice. Conversely, it may have been adopted and adapted by Tai Ji Quan practitioners and others under the influence of Wang Xiangzhai's propagation of his own style. Ba Gua Quan also practices a basic standing posture, from which one precedes to the primary "basic skills exercise" of "walking the circle." However, this stance is not much advocated today, and was never of such central importance as "walking the circle" itself. Wu Dang Quan is the general name given to styles of boxing originating from Mt. Wudang in Hubei Province. Mt. Wudang was the seat of the Beiji (Pole Star) sect of Taoism, which incorporated many militaristic rituals and after the Song Dynasty gradually grew into another center for the practice of the martial arts. It is traditionally seen as the source of the soft, "internal" styles of martial arts, as opposed to the hard, "external" styles of the Shaolin tradition, though this distinction is highly misleading. The Pole Star sect flourished there under the patronage of several Ming emperors. Unfortunately, again there is little to indicate the course of a possible development of unique martial arts practices. Styles practiced under the name of Wudang boxing today show few distinguishing features, and are clearly a far cry from their predecessors. Nevertheless, it is quite possible that during the late Ming, the combination of martial arts practice alongside Taoist methods of cultivation resulted in innovations in training and combat theory and practice. These may in turn have influenced the development of later "internal" styles. Did such innovations include the development of relaxed Standing Pole Exercises as basic training? The more common forms of Wudang Boxing do not, though these have all been highly popularized. However, when young, Wang Xuanjie and his family lived in the compound of a Taoist monastery. Here, Mr. Wang says, he regularly saw monks practicing various types of Wudang Standing Pole Exercises, though he has no further idea of their origins.

Wang Xiangzhai was born in Shenxian County, Hebei Province, on 2nd October, 1890. When still a young boy he practiced Xing Yi Quan under one of its greatest masters, Guo Yunshen. It seems that Guo was especially fond of this intelligent boy and taught him a great deal before he died, when Wang was still only fourteen or fifteen. Thereafter, Wang dedicated himself to the practice of martial arts, most especially Standing Pole Exercises. He spent several years traveling widely in China, seeking out famous practitioners. One of the first places he visited was Shaolin Monastery in Henan, where he spent several months researching boxing methods. The fruit of his experience was the development of his own unique style of martial art. This he first taught in Shanghai in the 1920's, calling it "Yi Quan" (Will Boxing) to emphasize the importance of that aspect and

to "reestablish the original sense and quality of ' Xing Yi Quan." Later, he moved to Peking, further developing his style and changing the name to "Da Cheng Quan" (literally Great Complete Boxing) He died in July 1963 in Tianjin, a master virtually unparalleled in the 20th century, both in his combat ability and in his contributions to the development of the art. The basis of Da Cheng Quan is the Standing Pole Exercises, which are considerably more varied than any previous tradition, yet which never diverge from certain basic principles of posture. They were designed to coordinate mind and body to develop strength, concentration and combat awareness. In his later life Wang Xiangzhai adapted them to the treatment of illness. The most basic posture is the "All-round Stance" (Hun Yuan Zhuang), which can be adapted to suit all levels of practitioners both for the treatment of illness and combat purposes. Unfortunately, Mr. Wang left no clues as to exactly how he came by its development. We have already looked briefly at a few of the possible influences from existing trends. There are also hints of a tradition amongst Buddhists called "Li Chan" (standing Chan meditations Though there are no indications as to the form it took, meditating in a relaxed standing posture would be a natural outcome of combining Chan meditation with traditional therapeutic theories as a method of mental and physical cultivation. This is in fact precisely what Mr. Wang' s "Allround Stance" is. It may be that a similar form was practiced by the monks at Shaolin Monastery or some other Buddhist establishment, and that Mr. Wang then combined it with the "San Ti Shi," developing his own forms in the light of his own experience and understanding of therapeutic exercise and martial arts practice. Whatever their origins, Mr. Wang' s Standing Pole Exercises have proved a highly effective method of physical and mental cultivation both for nurturing health and as the basis for combat technique.

SECTION II

Da Cheng Quan Boxing' s Standing Pole Exercises.

The Standing Pole Exercises are a unique practice combining elements of rest and recuperation with healthy exercise of both mind and body. Though they embrace a wide variety of sitting, lying and standing postures, as well as movements, standing forms constitute the core of the system, hence the general title. They have proved highly effective as an aid to the treatment of many chronic and more serious illnesses, as a method of recuperation, strengthening the constitution of patients after illness, and in developing a very sound, healthy and strong physique.

1. Theoretical Basis.

Chinese traditional medicine postulates that "the heart/mind (xin) is lord of the body." This xin is best seen as encompassing the cerebral cortex and central nervous system, which are indeed the "dictators" of the organism. All of the

organism' s thinking processes, vital organs and whole physical frame are controlled and regulated by it. Clearly, the cerebral cortex and central nervous system perform a wide variety of complex functions, putting them under considerable strain. If, due to excess physical, emotional or mental strain, they become overexcited or exhausted, they begin to function inefficiently, giving inadequate guidance, leading to mental and physical disorders. When practicing the Standing Pole Exercises it is first necessary to lead the activity of the cerebral cortex into a state of relaxed concentration and quiet. This enables it and the central nervous system to achieve a degree of rest and recuperation, while inducing a nourishing and rehabilitating effect through beneficial stimulus and an appropriate measure of activity. This is what is known as "entering a quiet (fixed) state" (ru jing/ding). The free and unobstructed flow of blood around the body is recognized as one of the most important elements in the development and maintenance of health. During practice the whole body should be as relaxed as possible, all joints slightly bent, and the whole body comfortably coordinated. With the maintenance of a static posture, this ensures a reasonable rise in heart rate, removes the obstructions to blood caused by tense muscles, and brings greatly improved circulation. "Standing Pole" is an exercise of the whole body. As the outer form of the body is not moved, all the internal organs settle, while all metabolic functions increase. This develops "movement within non-movement," that is, unhindered internal activity and movement within external stillness. It is a nonviolent and non-overburdening exercise, simultaneously providing rest and exercise, easily adaptable to any condition and encouraging development of the body' s innate strengths and abilities in a natural way. These factors make it uniquely important as a method for treating severe illness, where other more familiar forms of exercise are unsuitable. It also has a unique potential as a method for diagnosis and investigation under "exercise" conditions of heightened metabolic activity.

2. Essentials of Practice

1) Relaxation.

Relaxation is without doubt the most vital element not only in the Standing Pole Exercises, but also in any form of qigong or internal martial arts training if it is to be effective. Only when the body is relaxed will the internal organs settle, the blood flow freely and genuine coordination of the muscles ("the muscles as one") and control of strength be possible. One must never exert brute force for this will create tension, obstructing the blood flow and exhausting the body. Wang Xiangzhai wrote: The Standing Pole Exercises seek to develop strength from no-strength (nonexertion), movement from non-movement, and rapid movement from slight movement. The more relaxed the body, the faster the circulation of blood, and the faster strength will develop. If one exerts brute strength one will tense up,

and the body will thus lose its spontaneous flexibility, often to the point of obstructing blood-flow. This (relaxation' s) type of strength is largely formless, and of the mind (shen). If one uses the strength of "form" then the intrinsic nature of movement is lost.... When the body is as relaxed as possible, the mind (shen) is completely collected. Thence, though the form may appear base and sluggish, the mind is agile. How can one bring about such relaxation? Due to conditioned artificial actions and reflexes, many parts of the body are unnecessarily tense a great deal of the time. Such tensions are not easily got rid of. Therefore one must learn to relax. At the start of practice, one should use the mind consciously to relax first the head, then face, neck, shoulders and soon right down to the toes. During practice one may need to recheck oneself frequently, endeavoring to release tensions which arise, if necessary repeating the above process each time. In this way, one can through persistent practice gradually induce a high degree of relaxation. People who find it especially difficult to relax may find facial expression a help, aiding relaxation by adopting a calm, composed expression, smiling and yet not smiling, as if extremely content. Of course, "relaxation" here is a relative term. When standing in a fixed posture one cannot be as completely relaxed as when reclining. One must be "relaxed but not slack, tense but not stiff," as relaxed as possible without breaking the posture. One knows when one has reached such a state since one feels, as Wang Xiangzhai says, "as if pleasantly drunk or leisurely bathing in warm water." One feels as if one is floating in the air, air pressing in on all sides, the skeletal frame so perfectly aligned that it remains in position without effort, the muscles just hanging off the bones like clothes on a clotheshorse.

2) Concentration and "Entering a Quiet State".

"Entering a quiet state" is a common aim in all methods of qigong. In general, the deeper the state of quiet, the more effective will be one' s practice. The ideal is a state where the mind is completely calm, unruffled by random thoughts, and the attention clear and concentrated. Such a state is clearly intimately linked with the relaxation of the body, each enhancing the reaction of the other, and it is instrumental in developing the deep relaxation and patience necessary for long practice. At a shallow level, one' s mind generally has periods of calm and periods of thought. At a deep level, all is calm and one abides in a state of selfforgetfulness where there seems to be no mind or body within, no world without. Yet, one' s attention becomes extremely lucid and alert, acutely sensitive to one' s environment, but undisturbed. This is the most beneficial state for nurturing health as well as serving as a basis for the development of combat awareness. Taoist and Buddhist adepts developed a great many methods for calming the mind and concentrating the attention. However, Wang Xiangzhai, like many before him, emphasized that any method used should be as natural and simple as possible, never straight-jacketing or over-exciting consciousness. He

wrote:

Since this is a mental as well as physical exercise, overcoming random thoughts is an important aspect. However, a person's thinking is broad, especially that of an adult, and dispersing random thoughts is not easy. Many, then see this as a big problem, striving for the "quiet state" with the result that the more they strive the tenser they become and the greater becomes the load on the mind. As they chase out one thought, more arise in an increasing spiral of tension until the thoughts run loose like a wild horse. The ancients developed many aids for beginners to help them; however, in the experience of Wang Xiangzhai only by being completely relaxed and natural, not trying to control, just letting thoughts come and go without attachment, can one really stabilize and liberate the consciousness. If the incursion of random thoughts is especially bad, then one should imagine oneself to be a great cauldron, absorbing and melting any thoughts like snowflakes or leaves falling into a fire....

There are also quite a number of other "mental activities" which can be combined with the various postures. These serve the purpose of not only calming the mind and leading it into a quiet state," but also helping the practitioner to relax and get a feel for the posture. They include amongst others:

- a) Concentrating (gently) on one' s breathing or counting the breaths.
- b) Imagining one is lying in warm water which is flowing endlessly past and around one; or that one is standing in a warm shower, the water splashing onto one' s head and down one' s body; or that one is immerse up to the waist or neck in warm water.
- c) Imagining that one is standing like a wellrooted pine, unmoved by the wind.
- d) Imagining that one' s back, buttocks and legs are resting against a soft but supportive object.
- e) Imagining that one is hanging from a branch by a few hairs at the top of one' s head.
- f) Imagining that one' s arms are resting on a railing, or the hands are resting on two foot balls floating water.
- g) Imagining that one is in beautiful natural surroundings, and gradually merging with the whole great form of Nature.

A number of points should be observed when practicing these. They should not be applied indiscriminately, but in accord with the needs and special conditions of each practitioner. Do not force them or grasp too rigidly at them with the mind. They should be imagined gently, and naturally, with relaxed pleasure. If they feel a burden, tense or irritating, then relax and release the mind to settle naturally (as first described above). Lastly, once the method has served its purpose, bringing deep relaxation, excluding random thoughts and "returning all thoughts to one," it

too should be dropped for as the Buddhist maxim says, "To cross a river one needs a raft, but once across what use the craft?" If such mental activities are inappropriate or excessively forced or grasped at by the mind it may put added stress on the cerebral cortex, inducing fatigue, excessive control or restraint. This may well lead to further disorders and the dulling of one' s spirit and concentration, sometimes even losing one' s ability of selfcontrol and the development of abnormal reflex actions.

3) Posture.

When starting practice it is vital to assume correct posture, correct in form and correct for oneself The postures are dynamically balanced so as to create maximum physical equilibrium. This allows maximum potential for relaxation and the development of physique. Thus one must assume correct posture, though if need be allowing minor alterations to suit one' s individual makeup. One must also choose the correct posture for one' s physical condition. Each posture has differing characteristics to meet differing needs. The form and details of posture must be set according to the needs and illness of the practitioner and not applied indiscriminately. Neither is it necessary to press time limits. The practitioner should be allowed to progress at his or her own natural pace. In general though one starts by practicing for ten minutes two to three times per day, gradually increasing to forty minutes to one hour, by which time on practice per day is sufficient. Stick to one posture until one is thoroughly relaxed in it for a prolonged period. It is not advisable to rapidly alternate postures. Wang Xiangzhai wrote:

Generally, one should not make many changes of posture during practice, since once the body and mind are still and relaxed the blood flow speeds up. To suddenly change posture when internal movement and changes are just getting going will disrupt such developments.... However, once one fully appreciates the workings of internal movement, then any manner of external changes can be made without affecting such movement. One can change as one wishes without the constraints of posture.

4) Breathing.

Breathing throughout practice should be completely natural. Clearly controlled respiration is essential to energetic forms of martial arts training or indeed any exercise involving strenuous tensing activity. Likewise, it is as important in the Standing Pole Exercises as in any other form of qi-, gong to have deep, slow and gentle respiration. In the Standing Pole Exercises however this is achieved quite naturally. The nature of the postures emphasizing overall mental and physical relaxation and especially relaxation of the torso and abdomen, means that

breathing can gradually settle and deepen unhindered, as the practitioner develops without any need for artificial interference. Never force the breathing. Quite apart from being a large unnecessary mental burden, conscious forcing or interfering with the respiration can upset its natural rhythm, sometimes causing damage to abdominal nerves and muscles, constricted chest, and dizziness due to hyperventilation or asphyxia. Thus, the exercises are more than just "quietist meditation." They involve the intimate integration of appropriate mental and physical exercise, mind influencing body and body mind. The relationship between the two, and indeed the whole sense of the Standing Pole Exercises is expressed in the term xingyi. Wang Xiangzhai defines it as "taking intent (yi) from form (xing), shaping form from intent, intent born of form, form following the changes of intent." Though the outward form of practice is very simple, grasping the above concept and its details in reality is most difficult. Do not be put off by early problems. Understanding comes through personal experience and application, testing, feeling for oneself. Most of all enjoy it, keeping oneself fresh and relaxed, not treating it as a labor to be dreaded. Then its depths can be plumbed.

3. Certain Points to be Noted in Practice

- a) If one determines to begin practice either as treatment or for general health, one must have confidence in it. Only when one has such confidence will one really be determined to practice wholeheartedly. Persevere and be patient. It is no good practicing sometimes and not at others, giving up as soon as one sees something new or because one does not witness immediate changes. "Rome was not built in a day," and like any skill, this requires months and years of steady practice. Striving for results will only bring tension and disappointment. Relax and one is sure to reap the fruits of one's labors.
- b) It is not advisable to practice when overfull (or within one hour after eating), very hungry, overtired, or after having consumed alcohol; nor when overexcited, badly upset or worried. It goes without saying that practice will be far more efficacious if combined with general temperance in everyday life as regards drinking, smoking, late nights, etc. Setting up a fairly ordered schedule for practice will help. Stick to it. Will-power is all-important and is strengthened through practice and through being bothered to practice. Be firm of will during practice and one will find that this will strengthen one's fortitude in many other areas of life.
- c) Develop at one's own pace. Don't try to do too much too soon, or overstretch one's physical capabilities. Exhaustion or fatigue is to be strictly avoided. On the other hand, one must persevere, not just giving up because of discomfort or one just cannot be bothered. Concentrate during practice. Avoid any unnatural postures and remember that this is holistic exercise of the whole body. It is a common fallacy that such standing exercises are to develop stamina and the lower the position one stands in the better. This is completely contrary to the

whole essence of the theory of the Standing Pole Exercises. To quote Wang Xiangzhai again "If the muscles are tense then strength is exhausted". Relaxation is the basis for promoting blood circulation and strengthening the body as an integrated whole. Thus bend the knees only as much as is comfortable: the more relaxed they are, the longer one can stand. There is no need to concern oneself with gradually sinking lower to increase the degree of exercise. Of course, one may well find that after long practice one drops lower without noticing; this is perfectly natural and to be expected as one's legs strengthen.

d) Before beginning practice, relieve oneself and loosen all tight clothing. It is often helpful to do a little warming-up. This may include a few light loosening up or stretching exercises, a short Tai Ji Quan form, or whatever the practitioner favors, though avoiding any strenuous activities. Before actually starting, stand quietly for a moment or two to compose oneself. After practice it is advisable to take a short walk until the body returns to normal. Avoid breaking off practice suddenly, or doing anything too energetic or strenuous immediately afterwards. As with all such disciplines, practice should really be under the tutorship of an experienced teacher. In the case of practitioners who are suffering from illness, it is especially important that an experienced teacher assigns them the appropriate Postures and continually supervises their progress. For a normal healthy person, the standard "allround stance" is recommended. Practice of a lying posture in conjunction with it is also highly beneficial, since it allows the practitioner to fully appreciate the meaning of complete physical relaxation. One can practice at any time of day, though in the morning and before going to sleep at night are most favored, the latter especially, since it is of great benefit in promoting comfortable sleep. Clearly, one should try to practice in pleasant surroundings with fresh air and as few disturbances as possible. For those working, it is suggested to try to practice for a few minutes during a mid-morning or afternoon break (if one can find a quiet spot). This has a remarkably revitalizing effect, helping one to get through the day.

e) During the early stages of practice one may well feel a number of physical reactions, some rather unpleasant. The hands may first start to tingle, and later one may feel numbness, aches, pains, itching and trembling in various parts of the body. These are perfectly natural reactions due to the unaccustomed use of and strain on muscles, physiological changes in the metabolism and the blood circulation (especially expansion of the blood capillaries) and muscular relaxation's. One may also feel inequalities of tension, numbness and relaxation, on the two sides of the body, often bringing a sense of imbalance. These are all due to obvious physiological differences between right and left stemming from conditioned use. These feelings may be very disconcerting and may continue for many weeks or even months. Stay calm and persevere at each practice as much as one feels one can without straining oneself. Endeavor to try to relax the problematic part, but do not let it become a source of mental tension. If need be rest for a minute or two then restart. Most important do not become agitated,

depressed or give up the moment it becomes uncomfortable and persevere in daily practice. Then with the passage of time the constitution will improve and these reactions will gradually disappear, the body becoming progressively more relaxed, comfortable and strong.

4. The Standing Pole Exercises

1) Standing Postures

Basic stances:

Stand with feet apart at shoulder width, toes pointing forward or slightly outward. Bend the knees and sit down slightly, weight centered firmly on the soles of the feet. Keep the head and spine erect from tip to tail, chest empty (i.e. relaxed and slightly concave, never stuck out) and stomach full and relaxed, not pulled in. Gaze straight ahead, eyelids hanging relaxed over the eyes. Rest the tip of the tongue on the upper palate behind the front teeth, let the lips and teeth hang slightly open. Arms hang by the sides. The body should be perfectly poised, relaxed but not slack, breathing completely natural and no joint locked, as if the body is suspended in air, hanging from the top of the head by a string. This is the basic standing posture. Stand like this for a few moments relaxing the whole body and collecting one's thoughts before assuming one of the following postures:

a) Allround Stance

Assume the basic standing posture. Raise the arms to shoulder level keeping them curved as if holding a ball in each arm. Keep the fingers apart and slightly curved, palms pointing in and slightly down. Hands are at shoulder distance apart, and about three fists distance from chest. Elbows should be slightly below the level of the wrists. Shoulders must be relaxed, not hunched, with a slight sense of outward stretching, so the chest feels open, neither sticking out nor constricted. Curved arms should also have a slight sense of inward force, as if not letting a ball drop, though not physically manifest in tension. This posture is most suitable for those without any particular illness to strengthen the constitution, prevent illness and promote health into old age.

b) Supporting Twins Footballs

Assume basic standing posture, but this time raise the arms only as far as level with the navel. Arms and hands maintain the same curvature as the "All-round Stance," but hands are a little further apart and palms face upwards as if supporting a football in each hand. This posture is recommended for those with gastric or liver complaint.

c) Pressing Floating Footballs

Assume the basic standing posture. Hands are raised to the height of the navel, about one or two fists distance apart, palms down, fingers pointing forwards, as if pressing down on two footballs bobbing in water. Imagine that one is preventing the two footballs from floating away. This stance is good for gastric neurosis and

other gastric disorders.

d) Assume the basic standing posture

Arms are held out slightly to the sides, armpits empty, palms facing in to the sides of the body. Keep the shoulders relaxed. This posture is recommended for those with respiratory complaints.

e) This posture is basically the same as "Supporting Twin Footballs" but the arms are further out to the sides of the body, the hands turned outwards slightly as if pushing something. Imagine that one is sucking a large paper ball into each hand, and once the hands become warm, that one is pushing with the hands, the body leaning back as one does so. Be sure not to actually use force or to force the imagination. This is recommended for those with neurasthenia and other nervous complaints. f) Rest Posture

Assume the basic standing posture, but with legs only very slightly bent or even straight. Let the wrists rest on the hipbones at one's sides or slightly round to the back, palms facing to rear. Relax completely and listen into the distance. This is recommended for those with muscle strain of the waist or neurasthenia.

g) Parting the Waters

Assume a side stance, left foot forward, right foot back. (Here the right foot is at angle of about 45°, the left foot pointing straight forward in line with the center or heel of the right foot.) Bend the knees slightly, weight mostly on the back foot. Keep the spine erect, though possibly the torso inclined forward a little. The body is turned to point along the line of the back (right) foot, the head turned to look straight ahead along the line of the front (left) foot. Arms are raised sideways and a little to the front, the hands level with the navel, palms facing forwards. Gaze far off into the distance, or let the eyelid hang closed. One should feel as if standing against rushing water, or holding an enormous balloon in one's arms.

This posture can also be practiced with the hands turned so the palms face to the rear. One can also change sides when one leg gets tired, or even practice with the feet parallel as in the basic standing posture. This stance is recommended for those with muscular atrophy, vasculitis and mild myasthenia.

2) Sitting Postures

a) Meditation Posture

Sit cross-legged, in half-lotus (one foot up on the opposite thigh) or in full lotus (both feet up on thighs) on a cushion on the floor or on a hard bed, etc. Keep spine erect, eyes hanging closed, and hands resting in one's lap or on the knees. Relax the whole body. Listen quietly to (or count) the breathing.

b) Sit upright on a backed chair, torso erect, back resting on the back of the chair. Let the eyelids hang over the eyes, keeping a slightly contented smile on one's face. Hands rest on the thighs, palms face-up as if supporting two paper balls in the hands. Feet rest naturally on the ground, knees bent at **90** degrees. This posture is suitable for those with neurasthenia.

c) Sit on a backed chair, torso leaning back slightly to rest on the back of the chair. Eyelids hang partially closed, the face completely relaxed. Hands rest on the sides of the waist, shoulders relaxed and chest naturally sticking out a little. Stretch the legs out to form a A-shape, heels touching the ground, toes lifted up slightly. One can imagine that one is performing a slight paddling motion with one' s feet. This is good for those with arthritis and vasculitis of the lower ex tremities.

d) Sit upright on a chair, spine erect, shoulders relaxed.

Gaze far into the distance, face relaxed and chest lightly concave. Raise arms to a height just below the shoulders, fingers naturally spaced, palms facing outward. Feet rest flat on the ground, legs not extended. One should have the sense of the hands retracting as if sucking in two large paper balls. This posture is recommended for those with neurasthenia and sexual hypofunction.

e) Sit on a chair, leaning back slightly to rest on the chair back. Arms are the same as posture d), or can be rested on the arms of a chair. Legs extended, toes lifted off the ground. Imagine that one is gently rubbing or rotating something with each hand, though without exerting any real strength, or displaying movement. This posture is good for those with herniplegia.

3) Lying Postures

a) Lie flat on one' s back with a pillow of normal height under one' s head. Let the eyelids hang partially closed. Legs are stretched out straight and relaxed, heels on the bed. Hands are linked together at the "tiger' s mouth" (the part between thumb and forefinger), left palm resting on the stomach, right palm on the left hand. Relax the whole body and concentrated gently on one' s breathing. This is recommended for those with neurasthenia.

b) Lie flat on one' s back with a low pillow. Eyelids hang slightly closed. Legs pulled up, so the knees are bent, feet resting flat on the bed, legs about shoulder distance apart. Hands rest gently on either side of the chest, fingers spaced apart. Relax the whole body and feel as if one is floating in warm water. This is good for disturbances of the autonornic nerve system.

c) Lie flat on one' s back with a pillow of normal height under one' s head, legs naturally extended, arms extended by sides, fingers spread on the bed, thumbs touching the hips. Relax and completely empty the mind. This is recommended for palpitations and nervousness.

d) Lie on one' s side, head resting on the right palm, the left arm lying down one' s side and onto the stomach. Relax the whole body and listen quietly to one' s natural breathing. This is good for neurosis. These above postures are effective for most chronic illnesses, not just those mentioned, but for some especially weak practitioners, the sitting and lying postures are advisable. If the three forms can be coordinated in a course of practice the results will be even better.

4) Moving Exercises

The moving postures progress naturally out of the static standing forms, developing movement out of stillness with very little actual change of posture. Wang Xiangzhai emphasized the difficulty of such exercises, which he called "shift", or "testing strength," since they are designed to allow the practitioner to feel, test, and direct the flow of strength. They are very simple and repetitive in form, allowing maximum relaxation, concentration and coordination of mind and body, enhancing the continued internal movement developed from stillness. Relaxation is again central. Wang Xiangzhai wrote:

If one does not use the mind to relax and harmonize all the muscles of the body, they will never be free to expand and contract smoothly, and one will never be able to harness the use of lively strength". . . . "Lively strength" follows the movement of Will (yi), Will is the commander of strength, and strength is the army of will.

This is the aim of the moving exercises, rather than to just "exercise the muscles and joints." The movements should always be slow and even; slow, so that concentration and relaxation can be maintained, mind leading movement, feeling every change of body and strength; even, so that the flow of strength remains unbroken. This will lead to the development of stamina and control without tiring the body, restricting respiration or blood circulation. When moving it should feel as if friction is created between one's body and the atmosphere around, as if "swimming in the air." The movement should also be as if about to stop but not quite doing so, flowing on at the same unbroken pace. At first, movements will tend to be large and spacious, gradually becoming more and more compact as concentration develops and internal movement increases, until sometimes almost no movement is apparent. To begin with, just the hands and arms move, then the whole body is gradually led into the movement, until one moves in complete coordination, reaching the criterion of "if one part moves, all parts move." It may be useful to remember a couple of points: keep the body erect, not crooked, bent, or leaning to one side or the other; do not "break the posture,"⁹ that is, do not move so far that one almost loses balance and control; do not grasp at the posture, feel for the most comfortable position and the way the strength flows best; as before it is best not to rapidly change posture. Practice one form for five to ten minutes, or as long as one can; lastly, when first starting practice, there is no need to be too intense. Concentrate gently and enjoy the relaxed, comfortable flow of movement. a) Reeling Raw Silk

Assume a side stance (same as in the "parting the waters" standing posture). Gaze intently into the distance (at a tree, chimney, etc.). Raise the hands in front

of the chest at about shoulder height, arms curved as in the "Allround Stance," palms down, fingers forwards, hand corresponding to front foot slightly in front of the other hand. Use the body to press forwards with the hands until they are almost extended and weight has shifted mostly to front foot. Then, turn palms inwards to face each other, fingers pointing down slightly. Pull the arms back to in front of chest shifting weight back at the same time, then turn hands out, palms down, ready to push forwards once again. Repeat this movement in an endless, unbroken stream at a constant speed as if gently reeling silk. Keep the body as relaxed as possible using the mind, not muscular tension to move the limbs. When pushing forwards, it should feel as if one is pushing something through water or a viscous liquid, feeling the resistance of the air. When pulling back, it should feel as if one is pulling something back hooked under the hands, or that one has ropes from the shoulders linked to a distant object which one is pulling towards one. When pulling and pushing it should be as if wanting to move yet wanting to stop, as if there was a strong spring attaching wrists and chest, so the body has a slight sense of forcing backwards as one pushes forwards, and forwards as one pulls back.

b) Billowing Waves

Assume the side stance. Gaze intently into the distance. The weight is on the back foot, the hands in "pressing floating footballs" position at navel height, palms down, fingers forwards. Raise the hands slowly up and forwards in an arc, at the same time shifting one's weight forwards onto the front foot, until the hands are extended out at shoulder height, palms down, arms slightly bent. Then press the hands down and back in an arc to in front of the navel, shifting weight back onto back foot. Repeat this circular movement in an endless flow like the billowing of waves. As the hands press down, feel the head and torso rise up slightly in response, the whole body pulling the hands down and back. As the hands move up, feel the shoulders and the torso sink back down, the whole body pushing the hands up and out. Keep the elbows out, though never higher than the wrists and the whole body as relaxed as possible.

c) Fluttering Pennants

The starting posture for this is the same as the "Parting the Waters" standing posture. Shift the weight forwards onto the front foot, swaying the hands forwards. Then shift the weight back again, swaying the hands back to the starting position. Repeat this flapping motion in an endless flow as if the arms were two pennants fluttering in the wind, or as if one were a swan powerfully flapping its wings. Keep the shoulders down, arms bent and feel the friction of the air as one's arms move slowly backwards and forwards.

5) Walking Forms

a) Friction Step

Assume the basic standing posture, but with the arms out to the sides at about

navel height and slightly forward crouch a little as if sitting down slightly and keep the back erect. When one is relaxed and the attention collected, shift one's weight completely onto the right foot and strain on the hip. Move the left foot straight back a half step then forwards in an inward curve, brushing past right instep and out forwards to a pace in front of its original position, turning the toes out a bit as it lands. Shift weight forward onto left leg, turning torso slightly to left as one does so, then bring right foot forward in a curve past left instep and out to front, turning toes out slightly as it lands. Shift weight onto right leg again, turning to so slightly to left as one moves, then take another step with left foot. Continue forwards and then backwards in this way for as long as is comfortable. When taking a pace, raise the knee slightly, keep toes straight and do not raise foot too far off ground. It should feel as if one is dragging one's feet through mud, and as gentle as if one were rolling a ball along with one's toes. Again the motion must be smooth and unbroken.

b) Walking the Circle

Assume side stance, but with all the weight on the back (right) foot and the toes of the front foot turned slightly outward. Raise the arms at the sides to about shoulder height, palms facing up. Turn the head slightly to the left, gaze across left palm. Relax shoulders, shrink chest, bend knees and sit down slightly. Then start walking around in a circle to the left. Right foot takes straight paces forwards, then the left foot moves in curve past the right instep then to the left, toes turning out as the foot lands, as in the "Friction Step". Keep the speed slow and constant, as if wading through water, continuing to pace round in this way for a complete circle. After ten turns, turn the head to the right and circle to the right (or if space is insufficient, turn whole body round re retrace steps), now making the right foot move in a curve. The circle should be about 20 m. in circumference. If it is too tight one will become dizzy, and if too large then one's concentration will lapse. One can also practice by walking in a S-shape. This method of practice is much the same as the "Walking the Circle" form of Eight Trigrams Boxing (Ba Gua Quan).

6) Some Supplementary Exercises

These supplementary exercises are just a few techniques from the various regimens of self-massage mentioned in the opening section. Commonly practiced by Taoists, Buddhists, physicians and lay people alike, their lasting popularity recommends them as an appropriate way to maintain overall physical health and freshness, relaxing muscles and joints and stimulating blood flow to the surface of the body.

a) Knocking the Teeth

Knock the teeth gently but firmly together some 36 times. This method was most commonly used by Taoists before beginning litirgation or meditation.

b) Rotating the Eyes

Close the eyes, then roll them 24 times to the left and 24 times to the right. Sit quietly for a few moments with the eyes closed. Rub one's thumbnails together until they are warm, then use them to massage the closed eyes gently. Finally, open the eyes suddenly.

c) Beating the Heavenly Drum

Cover the ears with the palms of the hands, the fingers resting on the back of the skull. Cross the index finger over the middle finger on each hand, then let it slide off so that it strikes the back of the head just where the top of the neck joins the skull. This should be done 24 times and is useful for clearing the head.

d) Dry-Washing the Face

Rub the hands together until they are warm, then rub one's face with them. First rub from the bottom upwards then from the sides downwards. Keep the motion continuous and the pressure gentle, but firm. and even. Do this 16 times.

e) Rubbing the Scalp

Slide the fingers into one's hair and gently scratch and knead one's scalp about 100 times.

f) Rubbing the Bubbling Springs

Rub the hands together until warm, then use the left palm to rub the Yong Chuan acupoint in the center of the sole of the right foot. Having done this 100 times, do the same to the left foot with the right hand.

g) Massaging the Stomach

Sit or stand upright. Relax the stomach, then rub in an anticlockwise motion from below the navel up to the solar plexus and down again. Having done this 100 times, repeat it in a clockwise direction.

h) Waving the Head

Sit cross-legged, back erect, hands on hips. Wave the head from side to side 24 times, keeping the movement slow, gentle and even.

i) Rolling the Shoulders

Sit cross-legged, back erect, hands on hips, then roll the shoulders round and round 72 times.

j) Revolving the Windlass

Sit cross-legged, back erect, fists pulled in by the ribs, arms bent to 90° at elbows. Rotate the elbows forward then out and back in unison, using the shoulders as the axis. Do this 24 times.

k) Support the Heavens and Hold the Feet

Sit erect on the floor, the legs extended parallel straight out to the front. Put the hands together, fingers interlocking and stretch the arms above head, palms upwards, as if supporting the Heavens. Then, separate the hands and stretch the torso forward, keeping the spine straight, until one can get hold of one's toes. Repeat this 24 times.

Section III Therapeutic Foundations

1. Preliminary Investigations into the Physiological Basis of the Therapeutic Value of the Standing Pole Exercises

The question which strikes one most immediately in the study of qi-gong is, what is qi? One can see it simply as a concept adopted by physicians in ancient China to make sense of their observations after the clinical application of their methods of treatment, and also by Taoists to rationalize their methods of cultivation and the phenomena they experienced during practice. Likewise, one can rationalize it as an expression of the body's natural defense and self-healing capabilities. Chinese traditional theories vary in their explanations of it and its make up, and though schools of thought differ in their emphasis on it as a material or immaterial, physical or metaphysical phenomena, it is most commonly talked of as a definite physical energy it is easy to dismiss all such theories as mediaeval concepts not grounded in objective reality resulting from the misinterpretation of observed and subjective phenomena in the absence of scientific methods, and thus to dismiss qi as pure imagination. Nevertheless, this theory of the qi flowing through channels in the body has persisted for more than two thousand years, and the sheer volume of medical, Taoist and qigong literature recording the subjective awareness of it and its movement within the body forces us to give it serious attention, and to recognize that there must be an objective basis to the concept involving the relationship between mind and body. In Nature Magazine published on 10th March 1978, an article appeared by Gu Hansen of the Shanghai Nuclear Research Institute. In it she presented the experimental evidence demonstrating that the wai-qi (external energy) purportedly emitted by qigong masters from a point on the body was, in fact a low frequency infrared signal. This gave rise to a great deal of discussion, and a variety of theories couched in scientific terminology have been proposed to explain qi and its workings within the body. Unfortunately, despite investigations, no further evidence can be brought forward to shed any light on the existence, workings or composition of qi in the body, or of the existence of channels through which it might flow. Discussion of these various theories is fruitless, since they all lack solid experimental evidence and also prove incompatible with the traditional theories of the workings of qi to which they are being applied. Even worse, many writers on the subject endeavor to explain the problem by freely mixing modern and traditional theories, to absurd effect. Thus, the mystery of qi remains unsolved. It may be that concentration on a spot on the body excites nerves to the benefit of health or that some electromagnetic phenomena is involved. It may also turn out that several different phenomena are behind the various manifestations of qi. What is clear is that if the mystery is to be explained, there must be far more sound investigation of the physiological and

psychological factors involved and a rational assessment of the evidence, rather than jumping to conclusions with half-baked theories or simply chasing after the discovery of some mysterious energy. There is a burgeoning literature in China on the results of the clinical application of qigong and the recovery from illness through its practice, demonstrating its undeniable value in the treatment of a wide range of illnesses and for the preservation and development of health. However, there has been a surprising unwillingness to discriminate what is really essential and of genuine value in practice. All manner of styles are practiced, some complicated, including various combinations of breathing exercises, meditations, movements of qi with the mind, postures and movements, others very simple. Many different methods of meditation and concentration are advocated. Yet, a broad range of styles and methods have proved to be effective for a surprisingly similar range of ailments and with roughly the same range of success. There is no clear clinical evidence to suggest that one method is radically more effective than any other, for instance, that concentrating on the "Dan Tian" and circulating the qi is more effective than other methods of meditation. So long as the posture and meditation method are appropriate, allowing the practitioner to relax and concentrate while combining a degree of exercise, good results can be obtained. There is thus a great tendency to put the cart before the horse, emphasizing a specific technique as vital, when it is the overall state of relaxation coupled with exercise which is of value. Much more discriminating investigation is required if such methods as the "self-treatment" styles of qigong are to be definitely demonstrated as especially effective in treatment.

Another problem is that there has been insufficient elucidation of possible differences between mental states achieved by different meditation methods and if these affect the body in different ways. Indeed, the whole relationship between mind and body, how far and in what ways mind affects body and vice versa and other questions raised by qi-, gong phenomena, such as the part played by self-suggestion and self-hypnosis, have all to be investigated in detail.

Finally, there is a great tendency to stick to traditional techniques, despite the fact that some can lead to bad side effects. This is especially true in the case of over-concentration on a point on the body or the "self-motion exercises", which can lead to nervous disorders. Clarification of what is really essential in the practice of qi-gong should enable such methods to be avoided.

Yet, despite the claims of traditional theories and the mysteries which remain, scientific investigations have demonstrated the basic physiological factors which underlie the therapeutic value and effectiveness of qi-gong exercises. Though the following brief account covers the major therapeutic factors behind qi-gong practice in general, it is written with special reference to the standing forms of the Standing Pole Exercises. This is because the standing forms have proved most effective in the treatment of a wide variety of ailments, including chronic tracheitis, gastroenteritis, hepatitis, cardiac disease, high blood pressure, neurasthenia, chronic rheumatism, rheumatic arthritis, lipoma, thyroid enlargement and others,

as well as especially suitable to the development of a strong and healthy physique.

1) Effects on the Cerebral Cortex and Central Nervous System.

The importance of the cerebral cortex (C.C.) to the human organism is now fully recognized. It controls the whole of the central nervous system (C.N.S.), directing and coordinating the different functions of the body according to input received from both inside and outside the body. If the C.C. becomes over-excited or exhausted, then its functions become disordered. The various functions of the body suffer from this decline in control and regulation sometimes to the point of pathological symptoms developing, that is, illness. Likewise, illnesses, as malfunctions of particular parts of the organism, send harmfully stimulating signals to the C.C., placing a further burden on it, which will again influence the whole body. The major aim of the Standing Pole Exercises and indeed all qigong meditation, is to break this cycle, providing the C.C. with beneficial stimulus, causing it to relax into a protective inhibitive state. This reduces stimulation from chronic illness, giving the C.C. adequate rest and recuperation, allowing it to gradually recover and maintain its normal functioning capacity, and thereafter strengthen it. This inhibitory "quiet" state is contributed to by three main actors. First, relaxation and concentration of the mind and thoughts. By relaxing the mind as much as possible while maintaining a focus of concentration, one shuts down most of the excited areas of the C.C. allowing it a degree of rest and recuperation and breaking the cycle of harmful reoccurring excitation. A specific method of concentration is generally used, since it creates a new, pleasant focus of concentration to replace the old, pathological ones, though there is the danger here that the new focus will also be too strong, causing excess control or overburdening of the C.C. Clearly, for health purposes, the more gentle, pleasant and relaxing this focus the better. Second, the improved blood circulation combined with deeper respiration increases the supply of oxy-hemoglobin to the cells. This helps to produce a very relaxed sensation, which in turn provides a beneficial stimulant to the C.C. The greater this stimulation, the deeper the inhibitory state achieved, helping to disperse the focuses of harmful reoccurring excitation. Third, stimulation from posture. When practicing the Standing Pole Exercises, one must first assume the required posture, then hold it for some period of time, thus producing in the C.C. a focus of stimulation for its maintenance. Since there is no change in the outer form, beginners who have not yet, or have just, established this conditioned reflex will gradually see a reduction in input from the external perceptive organs. At the same time, the internal receptors (muscles, ligaments, joints, etc.) will not be accustomed to the new stimulation and respond accordingly, making it difficult to relax the processes of the C. C. at once. Thus, in the early stages of practice one will be disturbed by the physical reactions, giving rise to more random thought activity. Hence the usual need to employ a suitable mental activity which may help to rid one of anxieties,

troubling thoughts and also contribute to physical relaxation. The reactions of, the muscles and the general changes undergone during practice will create numbness, aching and other reactions. These changes are called "new stimuli" and they cause the muscles to become excited. This excitation is transmitted through the nerve fibers to the C.C. There they undergo analysis and signals are released to see if the ache/numbness has changed for the better or if any other reaction has occurred. This reflex is called the "probing reflex." It is transmitted to the affected part, and maintains the posture. If the "new stimuli" signals continue unabated from the same place at the same level and quality, owing to the increased endurance of the muscle fibers and the nervous system becoming accustomed to the signals, their peculiarity declines and the "probing reflex" is no longer emitted. Thus the aches, numbness and pains will gradually disperse and will be followed by a warm, slightly numbing but very comfortable feeling. This feeling is a most beneficial stimulus to the C.C. The deeper it becomes and the longer it lasts the more it will promote the relaxation and concentration of the C.C. and the inhibitory state developed. The necessity of daily practice, perseverance and patience to get through this early period of pains and troubles thus becomes obvious.

This inhibitory state is only restricted to certain cortex cell groups, and the depth of the "quiet" achieved depends on its distribution in the C.C. If it is limited solely to the upper layers it is only a "shallow" state, while if it extends deep into the layers, then a "deep" state has been achieved. Electroencephalogram investigations have demonstrated this state to be quite different from sleep or hypnosis. It is characterized by the appearance of beta wave in the front portions of both hemispheres, which increases in amplitude and expands towards the back of the hemispheres as practice progresses and the inhibitory state deepens. The alpha wave, however, undergoes little change, though sometimes exhibiting a slight increase in amplitude, cycle extension and a trend towards a gradual slowing of rhythm.

Investigations into relaxed sitting and lying postures show a reduction in reflex, muscular, blood-vessel and skin electrical reactions, demonstrating a general inhibition of the C.N.S., especially the Sympathetic Nervous System, beneficial to rest and recuperation of the C.C. This is largely felt to be due to direction of concentration away from external stimulation, since concentrating on a mathematical problem produced much the same initial phenomenon, Investigations by Dr. Xu Yingdou of the Beijing Co-operative Hospital suggested, as one might expect, that the change in the inhibited state in the C. N. S. and C.C. took longer in the practice of a standing posture than a lying or sitting one.

2) Blood Circulation.

The maintenance of a certain posture during practice means that the muscles must preserve a constant degree of contraction, bringing an increase in pulse rate. However, the posture is also a "relaxed" one with all joints slightly bent,

preventing the obstruction of blood flow due to excess tension or locked joints, and greatly reducing energy expenditure and strain. This creates the best conditions for the promotion of blood circulation, and hence the mobilization of blood in the internal organs, oxygen exchange, and other associated metabolic processes. Under such conditions, the small blood capillaries in the muscles expand, reflected by buzzing/numbing in the feet and hands, crawling sensations on the skin, and the whole body becoming warm or sweating.

Investigations by the Beijing Railway Hospital and No.1 Auxiliary Hospital showed that after forty minutes' practice of the standing "Around Stance" red blood corpuscles increased by anything from 21.000 to 5.900.000 per sq. ml.; white blood corpuscles by 400~.000 per sq. ml., and hemoglobin content by 1.5-2.3 gms. per sq. ml. The importance of this in increasing oxygen supply to tissues and improving the body's immune system is obvious. During simple lying and sitting postures the pulse rate and metabolic rate all tend to drop, creating maximum conditions for entering a quiet state, also reducing oxygen consumption and the deep relaxation allowing unrestricted blood circulation. During standing exercises the pulse rate increases at a steady rate, eventually reaching a stable level. Metabolic rate and oxygen consumption also show a gradual rise, then stabilize. Immediately after practice the pulse rate does not drop suddenly, there being little change between the first ten seconds and last ten seconds of the first minute after practice. This means that neither during practice nor immediately afterwards does excessive expansion of the right atrium occur as in most energetic sports. (This expansion occurs in any exercise where oxygen intake cannot keep up with consumption, or the breathing is restricted. Immediately after stopping, the obstructed blood in the veins of the outer thorax rushes in under pressure).

3) Respiration.

During the practice of the Standing Pole Exercises the hands and elbows are raised to differing levels. This means that the muscles of the shoulders, back and upper chest are needed to support them, creating tension across the upper torso. This, combined with relaxation of the abdomen, induces the onset of abdominal respiration without deliberately forcing it. As one progresses, the chest muscles will gradually relax, thus allowing thoracic expansion to join in. In this way, once a high degree of overall relaxation has been reached, a very deep and perfectly natural breathing results. During simple sitting and lying forms, there is no rise in pulse rate, oxygen and energy consumption dropping due to the high degree of mental and physical relaxation. As a result, breathing deepens and becomes very slow.

Standing postures see a rise in the pulse rate and a marked increase in oxygen consumption and metabolic activity. It is thus essential to allow the breathing to respond naturally to these demands as it adjusts itself to the needs of the metabolism. Deliberately slowing it down could prove very harmful. In the early stages, the respiration rate may increase quite considerably. But as relaxation develops, the rate will decrease as the breathing deepens and lung capacity

increases. Accompanying this development in lung capacity will be a beneficial increase in the permeability of the pulmonary alveolus wall and expansion of the lungs' capillaries. Further, greater chest expansion during inhalation increases pressure in the thorax, helping to draw blood out from the veins into the heart. Likewise, exhalation releases the pressure, helping the heart to push out blood. Not enough is yet clear concerning the effects of respiration vibrating through the nervous system. Clearly, the rhythm of deep, regular breathing is a beneficial stimulus in helping the body and mind to relax, and it is often used as a focus of concentration. Certainly, inhalation causes "tension" while exhalation causes "relaxation," a phenomenon utilized by many of the calisthenics types of qigong exercises and martial arts techniques. Lastly, there is the beneficial massage effect of deep respiration on the internal organs. When inhaling, the diaphragm muscles sink down and the mediastinum expands, while when exhaling the mediastinum contracts and the diaphragm muscles rise up. This expansion and contraction has the effect of slightly stretching the heart and revolving the heart and large blood vessels. At the same time, it prevents ossification of the ribcage, whilst increasing blood flow, helping to prevent hardening of the arteries. Relaxation of the abdomen allows the abdominal organs to settle, while the movement of abdominal respiration coupled with pressure changes in the thorax creates a massaging motion on them. Investigations have shown that such a massaging action on the liver causes an increase in choleresis, aiding digestion, prevents stasis of the bile system and expands the blood capillaries in the liver. Such massage also helps to prevent stasis in the stomach and intestinal system, working against the development of ulcers, gastroenteritis, constipation and other abdominal disorders.

4) Fatigue.

The Standing Pole Exercises are a nonexertion exercise, and unlike other forms of exercise, practice brings an alleviation of fatigue and an accumulation of energy, so that one feels refreshed and full of vitality and strength after practice. The basis of this phenomenon was explained as early as the 1920' s by the Chinese scholar Zhang Naiqi in his article "Towards a Scientific Interpretation of the Internal Martial Arts. He begins by investigating the real basis of fatigue, pointing out that it is not due to the simple energy required to perform an activity. He gives the example of walking. Say one walks a set distance of four miles at a steady three miles per hour, one would expect the same energy consumption and degree of fatigue each time. However, covering the distance while worrying about a deadline one must keep, or with a nagging pain in some part of the body will produce a much greater degree of fatigue than if one covers the distance chatting with friends or enjoying the good weather. He interprets fatigue as involving four elements:

- a) Tension in the torso.
- b) Tension in muscles not being moved or needed for movement -

unnecessary fatigue.

c) Excessive tension in muscles being used for movement -partially unnecessary fatigue.

d) Energy consumption due to activity-necessary fatigue.

To this we could also add straight mental fatigue due to worry, thinking, etc. though as Zhang Naiqi again points out, much of this fatigue is the result of the unconscious physical tensions it produces. This tension is largely manifested in the torso, especially the chest (as well as the shoulders and face). One can feel for oneself how, when one is angry, agitated or excited, the chest is tense and constricted. This tension can be a severe restriction on respiration functions, impairing atrium activity and the exchange of oxygen, poisoning the whole metabolism. Necessary fatigue is that resulting from the muscular tension and energy expenditure required to perform an act. However, we often use excessive tension in doing this, and more importantly, do not just restrict this to the required parts, tensing other muscles unnecessarily. Lastly, we are constantly beset by unconscious muscular tensions. For instance, watching a fight or an exciting film, one tenses up; when writing one tenses the face or hunches the shoulders. Most noticeably, we maintain a constant inward and upward contraction of the stomach wall. This is to prevent the sinking down of the stomach and intestines, the artificial suspension of which feels normal due to conditioned reflex. This also further compounds tension in the chest. (A child's chest and abdomen are relaxed. A series of painful or alarming experiences develops the tension reflex, which after a while becomes a conditioned state which feels normal.) All of these are tensions which place the body under considerable strain, impairing many of its functions and causing a great deal of unnecessary fatigue. Indeed, Zhang Naiqi points out that in most people, unnecessary fatigue probably outweighs necessary fatigue. The postures assumed during the practice of the Standing Pole Exercises are an excellent method of reducing this unnecessary fatigue by the conscious relaxation of tensions, especially those of the chest and abdomen. Steady practice will make this effect more permanent, extending outside practice into everyday life, so that such tensions are permanently reduced or eliminated. The increase in coordination and control from the exercises, especially through the process of relaxed movement, will teach the body to relax during activity, using only those muscles required with maximum efficiency. Thus, first during practice, then in everyday life and activity these unconscious and unnecessary tensions are eliminated, with the resulting conservation of energy. This is of enormous importance in the fight against illness, the nurturing of health and the development of strength.

2. The Special Physiological Characteristics of the Standing Pole Exercises

1) A Highly Adaptable Form of Mental and Physical Education.

The Standing Pole Exercises can be practiced almost any time, anywhere, without the need of aids, apparatus, large spaces, etc.

Any of the many lying, sitting or standing postures can be combined with appropriate mental activity to give the desired amount of exercise according to the needs and characteristics of the practitioner. Standing postures are most effective, since they combine conditions for the development of a beneficial inhibitory state in the C.C. with the steady increase in metabolic and cardiovascular activities. Hence, it is a thorough form of rest and exercise. Furthermore, for the healthy and those with a sound basis in the "treatment" exercises, a slight adjustment of posture and mental activity produces much greater exercise value, putting the C.C. into a highly concentrated state and the body into a state of hair-trigger sensitivity and free-flowing strength.

2) A Non Oxygen-Debt Exercise.

Many forms of exercise involve concentrated bursts of mental and physical effort during which the breathing is restricted, or suppressed. During such exercise, insufficient oxygen is provided for the body' s needs, resulting in labored or forced breathing. Such oxygen debt is accompanied by the inefficient dispersal of waste products such as lactic acid. The strain put on the organism by such phenomena is considerable. The Standing Pole Exercises, however, cause the practitioner' s pulse to maintain a certain increase (though never more than twice the normal rate), while the respiration remains unrestricted, indeed deepens and improves, oxygen intake keeping pace with oxygen consumption.

3) The Effects on Blood Circulation.

During the practice of the Standing Pole Exercises, while the muscles maintain a certain degree of contraction, breathing is not restricted. Hence, thoracic and abdominal pressure do not suddenly increase and the phenomena of excessive expansion of the right atrium cordis does not occur after practice. Rather, the pulse rate rises and drops gradually during and after practice, making it very suitable for practice by those with heart trouble or the very frail. In addition, the maintaining of the posture for a period without moving means that, once blood circulation has speeded up and is flowing freely, it will not be disturbed or obstructed by sudden movements, bending, twisting, locking joints, etc.

4) Posture.

Many of the unconscious tensions and resulting aches and pains in the body are the result of posture defects. The Standing Pole Exercises give the practitioner

the chance to become aware of such tensions and defects, providing an excellent method for gently and naturally eliminating them over months and years.

5) A Form of Diagnosis and Treatment Combined.

The Standing Pole Exercises are an excellent method to investigate the physiological changes undergone from the rest levels to the exercise state. These changes occur and can be observed while the body is static, employing fixed standards of form and time according to the limits of the individual. Under these conditions each physiological function is raised within reasonable and stable levels, and so it is a most scientific method of diagnosing the objective norms of each organ's condition in the active state. This method of diagnosis in the active state can be used to supplement the old style of relying mainly on diagnosis from pathological anatomical material, and the common method of diagnosis based on inspecting the normal or pathological functional norms of each organ in the passive state. This is important because the objective norms governing the development of disease are not limited solely to affirming the anatomical structure changes of the various organs, or to changes of objective norms in the passive state. There are certain chronic illnesses which do not exhibit functional changes while in the passive state, only becoming apparent during the exercise state. Investigating the objective norms of the functional activities of the organs in the active state is thus a new science in modern medical research. Most importantly though, the Standing Pole exercises are a viable and effective method of self-treatment. As a non-strenuous but thorough mental and physical exercise they can be practiced by even the very frail and seriously ill, combating and treating illness, changing the constitution and strengthening the body without the sideeffects of certain medicines or other forms of treatment. This is effected by one's own labors, a psychologically very important factor in combating and recovering from illness. They are thus a way to resolve, partially at least, the basic questions of frailty due to illness, treating chronic diseases which do not respond to treatment and depression and psychological problems during illness, combining diagnosis and treatment and strengthening the constitution in the most natural and beneficial fashion.

Accordingly, it can be seen that they have much potential for providing new material in the study of geriatrics, chronic disease, sports physiology, sports biomechanics, sports biochemistry, sports medicine and in the combining of Chinese and Western medical traditions.

ABOUT THE AUTHORS

Wang Xuanjie was born in Beijing into a military/official family and from an early age took to the practice of martial arts. Apart from studying under several accomplished masters, including the famous wrestler Xiong Dehan, he also

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