

**Why
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Traditional Chinese medicine holds that disease occurs when there is stagnation of qi, which will be cured when the circulation of qi and blood is improved. Qigong is a therapy effective for treating stagnation of qi and promoting the circulation of qi and blood. Qigong therapy can be divided into two main categories: self-treatment, i.e. the practice of qigong by patients themselves and treatment from others, i.e. receiving the external qi emitted by qigong masters.

Self-treatment

Practicing qigong in a proper way will make the qi flow smoothly, enhancing the metabolism and the immune function. It helps one overcome disease by tapping the latent power of the body. Although there are various ways to practice qigong, the following three elements should always be included, i.e., regulation of mind, body and respiration, among which regulation of mind is the most important one. Regulating the mind into a state of tranquillity is the most fundamental skill in qigong practice. Tranquillity is a state, in which one who is practicing qigong concentrates all his or her thought on the exercise with the mind empty of all distractions. Perception of external stimuli including sound and light is greatly reduced and topodyesthesia and gravity sensation of limbs and joints are lost. Expressed in modern medical terms, it is an inhibition state of the cerebral cortex. The inhibitory action restores to normal the disordered cerebrocortical function due to over excitation and suppresses the pathologic focus of excitation, creating favorable conditions for recovery of the health. The effect of qigong on neurasthenia, hypertension and peptic ulcer is probably related to the inhibitory protection, as these diseases are all due to nervous tension and disorders. Regulation of the body, particularly the posture, is also important. Generally, qigong is practiced in a sitting, standing or lying form. In the sitting or lying form of practice, the oxygen content of the body is about 30% lower than before practice, and the metabolic rate is 20% lower than before the practice. The oxygen consumption and metabolic rate may be even lower than during a sound sleep. At the same time, the respiratory rate and minute ventilation are also reduced correspondingly.

That is to say, during the practice of qigong the metabolism is lowered which is beneficial for reducing consumption of vital energy, allowing it to re-accumulate. That is why qigong is effective for some chronic diseases such as pulmonary tuberculosis and can strengthen the health in those with weak constitutions.

Respiration is a skill in qigong practice. The basic respiration is deep abdominal respiration. In some qigong exercises the abdomen is naturally extended during exhalation and retracts during inhalation, while in other qigong exercises the abdomen bulges during inhalation and retracts during exhalation. The respiration in either way promotes gastrointestinal peristalsis and improves digestion and absorption. Therefore, many people have an increased appetite and gain weight after qigong practice. Qigong has good results in the treatment of gastroptosis, chronic gastritis and chronic colitis. Qigong comprises both motion and stillness. Stillness keeps the body and higher nervous centers in an inhibitory state so that they have adequate rest to restore the normal function of the central nervous system. Motion excites the autonomic nervous system including the sympathetic and parasympathetic nervous system. During practice,

qi should be descended to Dantian, or in other words, thought should be concentrated on the lower abdomen. This forms a focus of excitation in the nervous system of the lower abdomen, promoting the secretory function of the visceral organs in the lower abdomen. The deep and prolonged respiration strengthens the movements of the diaphragm and abdominal muscles, augmenting the portal circulation and also promoting the systemic and pulmonary circulation's. The practice of qigong increases the vital capacity, trains the heart and improves the metabolism. All these may be attributed to the therapeutic mechanism of qigong.

Treatment with external qi

A sick individual has weak electromagnetism and is sensitive to the external qi emitted by the

qigong master, which stimulates the patient's ability to fight disease and restore health. The curative action of external qi can be explained in the following three respects:

1. External qi has a certain inhibitory or killing effect on bacteria in vitro.
2. External qi can enhance the immune function of the body, i.e. the body resistance.
3. External qi emitted by the qigong master consists of far infrared ray, near infrared ray, electromagnetic wave, microwave and infrasonic wave, which form a bioelectric field, serving as the basis of the external qi therapy.

The human being has an instinct of selfcure. Meridian bioelectricity has been found. In every part of the body there is bioelectricity of varying potential. If a lesion occurs in any part of the body, there is imbalance of the functions as well as imbalance of the bioelectricity, or in terms of traditional Chinese medicine, there is an imbalance between blood and qi. The external qi emitted by a qigong master is also a kind of bioelectricity which regulates the meridian bioelectricity of the patient to restore the normal balance of bodily functions and cure the diseases.

It should be noted that, although qigong has a curative effect, it is not a cur-all. It has its own indications and-contraindications, no matter whether one does exercises oneself or whether one is treated with external qi. There is no reason to reject medication and other therapeutic measures. In a word, the best way to restore health is a selection of different effective therapies for patients according to different constitutions, conditions and symptoms.

SCIENTIFIC EXPERIMENTATION ON QIGONG

Is the qi produced during qigong practice or the external qi emitted by the qigong master substantial? What is qi? Why does the external qi have therapeutic effects? These questions have been asked for a long time. In the last ten years Chinese scientific researchers collaborating with qigong masters have done research with encouraging results.

Scientific Evidence of Qi

In the Shanghai College of Traditional Chinese Medicine a qigong master called Lin Housheng skilled in emitting external qi from Laogong (a point on the palm where the tip of the middle finger touches when the fist is clenched) effectively treated quite a few

complicated cases. However, nobody believed his therapy as well as the external qi emitted from his palm. The treatment was taken as sorcery or merely suggestion. Starting in 1977, he sought an effective test to prove the existence of external qi. Later, he met Ms. Gu Hansen, a scientist working in the Shanghai Institute of Atomic Nucleus, the Chinese Academy of Sciences. She was interested in research on amplifiers of micro-signals and also in life sciences. They collaborated on testing the existence of qi with modern scientific instruments. The following are the experiments:

- Two close-range infrared surveyors were designed. The surveyors directing to the right Laogong of Lin Housheng received the infrared radiation at a distance of 1.2 cm from its receiving transducer when he emitted his qi. When qigong was well performed, the infrared modulation depth was as high as 50% with a low frequency of 0.05 per second; but when Lin Housheng held his qi, the infrared modulation depth was less than 10% with a high frequency of 0.3 per second. By the end of qi emission, the modulation depth was round 30% with a frequency of 0.17 per second. The results revealed that the infrared radiation of the qigong master was specific, different from that of ordinary people whose modulation depth was less than 10%.

- With the aid of the electric charge detector, it was found that Laogong was full of electrostatic charge when Lin Housheng emitted qi. The polarity changed along with the change of physiological status. When Lin Housheng felt comfortable, there was an increase of negative charge and when he held the qi, there was an increase of positive charge. This suggested that the bioelectricity emitted by a well-trained qigong master could rearrange the doublets (bipolar particles) of living substance at the acupoint area from randomness to a specific order.

- It was detected that the electric resistance at Neiguan (a point on the anterior aspect of the forearm between the two tendons, 2 cun above the transverse crease of the wrist) was drastically reduced when qigong was practiced. According to the resonance theory, this phenomenon can be attributed to the electric resonance at the site where the tissue contains a kind of structural substance with magnetic action, most probably nickel protein (protein combined with nickel). With the aid of modern scientific instruments, they carried out the preliminary determination of qi and concluded that the external qi in qigong was composed of infrared radiation modulated at a low frequency and that the qigong master emitted infrared electromagnetic waves. For the first time the existence of qi was proved.

In May 1978 their paper entitled "The Preliminary Experimental Results of Investigation on the Material Basis of Qigong Therapy" was published in the first issue of *Zi Ran Za Zhi* (Journal of Nature) in Shanghai. These results evoked worldwide reaction. Since then the labels of "superstition," and "witchcraft" have been removed from qigong and many scientists are interested in the research of qigong.

Soon after the above experiments, Gu in collaboration with another qigong master called Zhao Wei gave evidence to show the "external qi" in qigong as a kind of corpuscular flow, and published a paper entitled "The Preliminary Experimental Report on Detecting the Material Basis of ' External Qi' Corpuscular Flow." The following was found in their experiments.

1. The external qi emitted by the qigong master standing one meter away moved a thread hung in the air and caused forward and rotatory movements of dust.
2. The signal of external qi sent by the qigong master was detected in four ways:

(1) Experiment on the distance and range of its action: 27.5 mv. was detected by the central probe at a distance of 50 cm, 22.5 mv. at a distance of 100 cm, and 10 mv at a distance of 150 cm. Thus, the greater the distance, the less the intensity of the signal action.

(2) Experiment on the speed of motion: Within a distance of 1040 cm from the qigong master' s finger to the probe, the speed of the sigal motion was 20-50 cm/sec.

(3) Counter-current experiment: The signal sent by the qigong master like the molecular flow of the air could penetrate a 60~ p laser grating but could not penetrate a piece of glass.

(4) Copper-grid experiment: The signal sent by the qigong master was partly captured by the electric field of the copper grid.

The above experiments indicate that:

(1) The signal, i.e., external qi sent by the qigong master is a kind of corpuscular flow.

(2) The signal sent by the qigong master is similar to the molecular flow of the air, the diameter of the corpuscles being larger than the intermolecular distance of glass, but smaller than 60~ p.

(3) The signal sent by the qigong master is different from the molecular flow of the air, some of the corpuscles being positively or negatively charged.

Almost at the same time, similar results were obtained in Beijing by some other qigong masters and scientific researchers.

Detection of the Infrared Rays and Infrasonic Waves of Qigong.

In the early eighties, Huang Xiaokuan, a qi-gong master In Beijing and some scientific researchers carried out experiments to detect the infrared rays and infrasonic waves of the external qt in qigong. Infrared Rays Infrared rays were detected from the right Laogong of three qigong masters with a thermograph of the type AGA 6SOLW made in Switzerland. At a distance of 1-2 meters away from the receiving probe, the elevation of the infrared rays during the emission of qi from the hand or eye can be shown in Table 1.

Table 1. Elevation of infrared Rays During Emission of External Qi In Hand or Eye Practice.

Qigong Master (Code name)	Period of Qi Emission (mm)	Far infrared Elevation	Region of Practice
A	5	0.5 ⁰ C	hand
B	3	0.3 ⁰ C	hand
B	5	1.0 ⁰ C	eye
C	5	0.6 ⁰ C	hand

Infrasonic waves: They repeatedly detected the infrasonic change with a infrasonic detector made by the B & K Co., from Denmark, when the external qi was emitted from the Laogong of three qigong masters. They used two different methods of detection

direct touching, i.e., direct touch of the energy transducer with the skin of the point area, and air conduction, i.e., detection with a space kept between the transducer and the skin of the point area. The experiments were carried out both in an ordinary laboratory and in a sound-proof room. The infrasonic change detected during the emission of external qi is shown in Table 2.

Table 2. Change in the infrasonic spectrum Before and after Qi Emission.

Qigong Master (Code Name)	Direct Touching			Air Conduction			Region of Practice
	Before practice (Hz)	After practice (Hz)	Value of elevation (Hz)	Before practice (Hz)	After practice (Hz)	Value of elevation (Hz)	
A	33	48	15	33	53	20	Right Laogong
B	37	52	15	41	60	19	Right Laogong
C	33	48	15				Right Laogong

From the above data it can be seen that qi is the basic substance to maintain and regulate life. When the qigong master sends the external qi to the patient, the latter will have a feeling of numbness, heat, distention and relaxation, as well as involuntary movements of the body directed by the external qi. From the perspective of biophysics, this can be explained as the result of information transmission. The external qi has the effect of promoting and readjusting the flow of qi and blood in the meridians and collateral's, and regulating the neurohumoural function for recovery from fatigue and strengthening the body resistance against disease. All of these may be related to the infrared and infrasonic action of the external qi on certain substances in the patient's body. Experiments also showed an increase of infrared information and the relationship between the intensity of the infrared information and the length and continuity of the practice.

Infrasound is a kind of inaudible sound with a frequency less than 20 Hz. It is characterized by low attenuation and distant propagation. Therefore, the infrasound produced by qigong has great energy and can affect the arteries or peripheral circulation from a long way off to promote the blood circulation and induce body movements. In other words, the infrasound of qigong has penetrative power from a long distance. In brief, the promotion of blood flow and induction of involuntary body movement by external qi is the result of the combined action of infrared and infrasonic information. The effect of the infrared information is to dilate the blood vessels of the affected area by heat, while the effect of the infrasonic information is to improve the blood circulation by removing the obstruction of the affected blood vessels. In addition, there may be some other information that has not been known. This is the scientific basis of the therapeutic effect of qigong.

Immunological Experiments.

External qi has the potent effect of destroying and inhibiting cancer cells. This conclusion was drawn by Professor Feng Lida and her colleagues, based on repeated experiments made in the Chinese Research Center of Immunology, Beijing. Professor Feng is a researcher on Immunology. In 1978, a patient suffered from advanced

carcinoma of the lung. With a thoracotomy it was found that surgical resection of the tumor was impossible owing to its diffusion. Thus, the patient was certain to die. However, he miraculously survived by practicing qigong. Why the carcinoma could be treated by qigong aroused Professor Feng' s interest. At that time there was no report regarding the inhibiting effect of qigong on cancer cells, particularly no research of its effect on the morphology of the cell surface and the intracellular structure as well as on the chromosome. Starting in 1979, Professor Feng, together with the staff of Immunology Research Section of the Chinese Naval General Hospital, repeatedly carried out experiments and with the collaboration of other hospitals, they found that the external qi in qigong had a marked inhibiting effect on *Bacillus dysenteriae* and four other species of bacteria. In 1984, they carefully studied the effect of external qi on the cells of human cervical carcinoma and gastric adenocarcinoma with the techniques of tissue culture in vitro, cytogenetics and electron microscopy to observe the change of cells in number, their ultra structure and chromosome aberration. The results indicated that:

1. The average destruction rate of external qi on cervical carcinoma cells after 20 minutes' emission was 30.72%, the highest destruction rate being 59.61 %. In order to confirm this result, they did the experiment with strict control repeatedly in 20 sets of experiments showing the reliability of the results. Meanwhile, their transmission electron microscopic observation showed degeneration, swelling and expansion of cervical carcinoma cells with karyolysis and cellular necrosis.

2. The average destruction rate of external qi on gastric adenocarcinoma cells after 60 minutes' emission was 25.02%. Similar results were observed in 41 sets of experiments with the external qi emitted by different qigong masters. For the purpose of further confirmation they made scanning electron microscopic observations which showed marked morphological change when the findings before and after the action of external qi were compared. After the action of external qi the cellular villi were lost or became short and sparse, the surface structure of the cells was deranged with leakage or cavity formation and even complete destruction in some cells. Chromosomes are the basis of human heredity. The relationship between the change of chromosomes and development of tumors is significant. In their experiments remarkable differences were found between the structure of chromosomes before and after the action of external qi. After the influence of external qi, there was interchange and laceration of the monomers with an increased ratio of dicentric chromosomes, showing a marked inhibiting and destructive effect of the external qi on the chromosomes of gastric adenocarcinoma. Professor Feng' s work was a great development in qigong research, indicating that the research in China had already gone from the cellular level to the molecular level. They also carried out some animal experiments showing a marked therapeutic effect of external qi on leukemia and pulmonary carcinoma. According to their studies, the external qi emitted by qigong masters includes far infrared rays, electric waves, magnetic waves, microwaves and infrasonic waves. Probably there are other substances that cannot be detected by the instruments available at present. The following case examples given by Professor Feng are quite illustrative. Zuo Qian, aged seven months had had pro-fuse vaginal bleeding since she was four months of age. The diagnosis was embryonal carcinoma. Resection of the uterus and ovaries was suggested, but the expected survival period was only two years. The parents sought a cure for their baby from Professor Feng. She reconfirmed the diagnosis of embryonal

carcinoma after careful examination. After 10 treatments with external qi in one month, three masses flowed out from the vagina which proved to be pathological sections of embryonal carcinoma coming off after the external qi therapy, some of the cancer cells were degenerated or dead. The infant's tumor was markedly reduced in size and the vaginal bleeding diminished. The child's general condition became much better with improvement of spirits, sleep and appetite. Chen Shuo, a two year old girl lost the sight of both eyes due to retinoblastoma. Extirpation of the eyeballs was advised, but her parents refused. Professor Feng treated her with qigong therapy using external qi. After 10 treatments₁ the child began to have blurred vision.

Change in Microcirculation and Hemorrhology.

In order to investigate the physiological effect of qigong and its mechanism₁ microcirculation capillaries) and hemorrhological flow of blood indices were studied in 24 patients. Marked improvement was observed by comparison of the data obtained before and after 30 minutes' qigong exercise:

1. Microcirculation was better regulated as shown by the increased number of patent capillaries, decreased ratio of anomalous loops, improvement of intracapillary stagnation, and increased speed of blood flow. In a normal person, strenuous exercise causes a decreased number of capillary loops and an increased speed of blood flow, but no remarkable change in the pattern of blood flow. However, with qigong, the capillary loops became clearly visible and intracapillary blood stagnation lessened or disappeared, so there was complete readjustment of microcirculation.
2. Hemorrhological studies showed reduction of the whole blood viscosity. It was also shown that microcirculatory disturbance was closely related with abnormal blood viscosity; for example, about 70 percent of the patients with coronary heart disease had both microcirculatory disturbance and abnormal blood viscosity. Qigong had a good effect on both the blood rheology and microcirculation.

Breakthrough In Qigong Research.

As mentioned above, the external qi given by qigong masters often showed good therapeutic effects. It aided recovery from bone fractures, enabled those crippled with spurs to walk swiftly, lowered the blood pressure in hypertensives, and gave relief to many patients whom physicians and surgeons could not help. Then, what is the effect of qigong masters, external qi? In one of the top universities in China - Qinghua University, a series of scientific experiments was carried out in collaboration with the well-known qigong master Yan Xin. A breakthrough in qigong research was achieved. In the early eighties, some scholars and professors in Qinghua University began to be interested in qigong and started doing some research. After 1984, they found the double refraction effect of external qi on an organic liquid crystal, a substance similar to the tissue of cell membranes. After careful research, they concluded that the external qi caused directional elastic turn of liquid crystal molecules. Several years ago, in Qinghua University a qigong research group was established, comprising more than ten professors and lecturers from seven departments. They did research on external qi at

the molecular level. Their research was concentrated on "information water," a liquid with physiological actions created by qigong masters when they directed their qi at the water.

Raman laser observations on "information water"

Qigong master Yan Xin and the research group of Qinghua University started their experiment at the end of 1986. It was a snowy day with a temperature of ~5 degrees centigrade below zero. But Yan Xin was dressed only in thin unlined clothes. Accompanied by the scientists, he went to the laser laboratory. Entering the room he emitted the external qi without telling the others. At the beginning of the experiment they asked Yan if he was ready to turn off the light. Yan agreed. But they could not turn the light off, no matter what they did. This meant that they could not make the phototubes work and could not start the experiment. Then Yan went ahead and lightly touched the switch and all the lamps went off immediately. The researchers were startled by Yan' s unexpected performance. They took it as a harbinger of miracles in the succeeding experiments. Just as they expected, Yan went to the automatic balance recorder and operated the recorder with the emitted qi to draw the graphs that the scientists had drawn. When they were puzzled, Yan went to another laboratory and sent his qi to the recorder at a distance of more than ten meters. Various pulsing signals were thus recorded. Before the scientists formally started the experiments, Yan' s wonderful performances had already excited them. They were prepared to do a series of biophysical and chemical experiments to investigate the effect of external qi. The first experiment was Raman laser observation of external qi acting on a substance, i.e., Raman spectrographic assay of "information water." Water is the major component of the body. The body of a new-born baby contains 80 percent water, and the body of an adult about 65 percent. Water not only serves as the most important solvent for maintaining all the life processes of the body, but it is also a medium for generation and transmission of all the biochemical and biophysical reactions. In medicine, water has peculiar effect. "Information water" is a special kind of water that has special properties because of the external qi projected by qigong masters and it is wonderfully curative. The Raman spectrograph is an instrument devised for detecting the change in vibrations of the groups in molecules. Its principle is based on the fact that a sample, when it is irradiated with monochromatic light (e.g., laser), produces scattered light different from the incident light in frequency. This phenomenon was discovered in 1928 by Raman, an Indian physicist, and is called the Raman effect. In Raman scattering each line represents a special polarization, detection of which will give information about the molecular structure of the sample. Therefore, the Raman laser spectrograph is now widely used for studying the position of various functional groups and chemical bonds within the molecules as well as making a quantitative analysis of compound mixtures. The scientists accompanied qigong master Yan Xin to the Instrumental Analysis Center of Qinghua University. In order to guarantee the strictness and reliability of the experiments, they conducted the experiments in a double-blind way, both the experiment director and qigong master did not participate in the preparation and analysis of the samples. In each experiment two groups of samples were prepared, each group consisting of two or three samples. All the samples were placed in hermetically-sealed glass containers and assayed before the effect of external qi. Then, one group of the samples was given to the qigong master to receive external qi, while

the other group remained untouched taken as the control. Two samples of tap water were given to Yan Xin. Holding them in his hands and looking at them, Yan then said. "OK, go on with the analysis!" The scientists were surprised. How could the external qi be sent to the samples with just a glance? But they did the analysis. At the same time, Yan was brought to a catalysis laboratory for another experiment. There was a quartz glass container full of hydrogen and carbon monoxide. It is difficult to induce a chemical reaction of these two gases. The reaction can only take place under a pressure dozens of times the atmospheric pressure and a temperature higher than 300 degrees centigrade with the presence of a certain catalyst. But now the pressure in the container was only normal atmospheric pressure and the room temperature 13 degrees centigrade. Except for the gases, there was nothing else. Yan proposed that he should send out strong external qi and asked the others to leave the spot. Five minutes later, Yan told them that he could no longer send external qi to the container because the latter was sounding. Then they took the container away for Fourier transform infrared spectroscopic analysis. The results of the two experiments were as follows: Tap water which had been affected by external qi was analyzed by the Raman spectrum. The Raman spectrum of "information water" was different from that of ordinary water. This discovery was of the same significance as revealing the secrets of the therapeutic effect of external qi. In the catalysis laboratory the spectrum after computer analysis showed a new chemical product which indicated that the external qi induced the chemical reaction. of course, the reliability of the results could only be guaranteed by repetition of the experiments. The experiments were repeated soon afterwards. This time the experiments had the same contents, but Yan Xin emitted qi from seven kilometers away from the laboratory by emitting his external qi to two different places simultaneously: one being the laser laboratory with the laser device and the other a dark room with water and a mixture of gases. One can imagine how difficult it should be, if the external qi. was sent from a remote place to act on lifeless substances. The result confirmed the previous experiments. On the basis of these experiments, the scientists made more explorations. They asked Yan to exert his external qi on a series of solutions such as normal saline, glucose solution and medemycine at various distances from dozens of meters to several kilometers or even two thousand kilometers. More than ten experiments on eight different samples were performed in one month Under the influence of external qi all of the samples underwent remarkable changes. Once in an experiment, a research group of 20 personnel including professors, lecturers and graduate students worked together with seven instruments. Their experiments revealed the action of external qi sent out by the qigong master on multiple molecules constituting cells, as one of the therapeutic mechanisms of qigong.

Molecular experiments

Scientists and qigong masters were not satisfied by the achievements they had accomplished. They proceeded to more difficult and valuable experiments.

1. Effect of external qi on DNA and RNA.

DNA is the site of genetic factors; it manages the hereditary function of the body. RNA determines the synthesis of proteins. If external qi affects DNA and RNA, detection of the effect is certainly significant.

An experiment was carried out in February 1987.

The subject of the experiment was a kind of bio-macromolecule called liposome, similar to that contained in the cell membrane. The sample was placed in one room and the qigong master was guided to another room to emit the external qi. The qigong master proposed doing it at a remote place. So they drove ten kilometers away for the experiment. Ultraviolet and visible spectrophotometric assays with computer analysis showed that the samples of the experiment did change, while those not having received the external qi remained unchanged.

To confirm the reliability of the experiment it was repeated. This time it was done from fifteen kilometers away and the qigong master emitted the external qi in the car. The result was again a success. Then they went on with the experiment regarding the effect of external qi on DNA and RNA. The samples used in the experiment were DNA of calf thymus and RNA of yeast. Another sample of DNA was secretly placed a little bit away from the sample under experimentation.

The qigong master, sitting in a driving car, emitted the external qi. The ultraviolet spectroscopic analysis revealed change in the molecular structure of DNA and RNA. The result indicating the effect of external qi on heredity is of great significance in biology. It is interesting to note that the sample the qigong master did not know about remained unchanged, indicating the willed direction of external qi. 2. Effect on organic chemical reaction.

Since external qi has an effect on the cell membrane and DNA, could it influence intracellular biochemical reactions?

A test tube containing a mixed solution of n-hexane and bromine was enclosed in a double-layered envelope made of craft paper. The solution was deep red, but once exposed to sunlight or strong ultraviolet ray, the color changed.

The experiment was carried out at night. The test tube enclosed with the envelope was placed in a laboratory of the biology department. After the qigong master emitted the external qi, the test tube was immediately unwrapped. The scientists were puzzled to find that the solution changed color. Where did the light come from at night? How could the light penetrate the double layered Kraft paper? How could the external qi make the solution change color?

In another even more interesting experiment, after the emission of external qi by the qigong master, the upper two-thirds of the solution changed color while the lower one-third remained unchanged. Was that due to the orientation and regionalization of external qi?

In summary, the experiments carried out by the qigong research group of Qinghua University were very successful. They have made encouraging progress from the perspective of molecular biology. Science circles in China have devoted much attention to their achievements as an important breakthrough in the scientific research of qigong. New progress in this field is awaited.

CHAPTER FIVE IDEAL MEASURE FOR PROMOTING HEALTH

Millions of people are practicing qigong in China, because it is generally recognized that qigong is an ideal measure for promoting health. Why is qigong taken as an ideal measure for strengthening the health? In antiquity there were no hospitals or medical doctors. How could the ancient people protect themselves from disease? According to

the archaeologists and historians' research and inference, at that time people paid attention to doing exercise, protecting themselves from the cold and disease by jumping, dancing, and meditative sitting, from which measures for maintaining the health, including qigong, were developed.

Practicing qigong does not need any particular condition or equipment. There is no limitation of sex, age or constitution. Qigong can be performed in any season and in all weather, indoors or outdoors. During practice, one can stand, sit, walk or lie down. Therefore, everybody can do it.

Qigong promotes the physical and intellectual development of children. It can develop their potentialities and facilitate the development of the brain and visceral organs. For adolescents, qigong regulates and balances their physiological reactions and impulsive adolescent psychology. It also promotes their learning ability. For adults, qigong can remove fatigue and raise working efficiency. It is worth noting that qigong has a very good effect on the fetus. When a couple practice qigong, they strengthen their body functions and mental condition, which helps the baby. For the aged, the effect of qigong is even more marked. Qigong can make the best use of the stored nutrients, better than taking tonics such as ginseng and pilose antler, and is effective for prolonging life. In a word, everyone can practice qigong and benefit from it. Therefore, it is advisable for everyone to learn qigong.

Three Key Elements of Qigong

Qigong is a unique exercise for strengthening the health. Through conscious regulation of respiration and movements it relaxes the body and mind, and regulates the circulation of qi and blood, improves the metabolism and develops the potentialities of the body. Generally speaking, qigong is composed of three key elements, i.e., relaxation and tranquilization, direction of qi by the will and movement of the body. These three elements can be summarized as regulating the breath, the mind and the body.

1. Relaxation and tranquilization: " While practicing qigong, the mind should be calmed. Tranquilization of the mind refers to eliminating nervousness and relaxing the whole body and mind in a quiescent, comfortable and peaceful state. Only when the mind and body are relaxed, can the nervous excitation be reduced and the antagonism between the extensors and flexors weakened, resulting in decrease of the pressure on the vascular wall and dilation of the blood vessels that facilitates the circulation of qi and blood. So, relaxation and tranquilization are the prerequisites for directing the flow of qi by the will.

There are quite a few methods of relaxation and tranquilization. One of the common methods is respiration-counting, i.e., to concentrate the thought inward by counting one's own respiration so that all the distractions from the outside will be eliminated and the tranquil state will soon ensue. Inward-looking is a method to calm the mind by closing the eyes and looking inward. Will-concentration is to induce tranquilization by directing the will on a certain part of the body and concentrating the thought on a spot.

2. Direction of qi by the will: This is the most fundamental exercise in qigong. First of all, the will or the flow of thought should be concentrated on a certain part of the body, such as Dantian or Yongquan (in the center of the sole of the foot). Only the concentrated will can promote the flow of qi. As soon as the body is relaxed and the relaxed is calmed,

the will or the flow of thought should be concentrated. If tranquilization is immediately followed by concentration, a corresponding focus of excitation is produced in the cerebral cortex to protect against the attack of pathogenic factors. The more important thing is that through concentration of the will and direction of the flow of qi by the will a state of outer stillness and inner motion is formed, which promotes the self-regulation and self-control of the body and develops the potentialities of the body. This is the most important element of qigong exercise.

3. Movement of the body: This refers to adjustment of the posture during practice. Movement of the limbs can promote the flow of qi in the meridians and collateral's, helping the direction of the flow of qi by will. The principle of body movement is to adjust the body to the most comfortable posture, including the head, neck, waist, limbs, fingers and visceral organs.

Body movement can be integrated with the thinking in images, causing further concentration of thought. During body movement, it is important to keep the respiration natural and smooth with fine, deep, even and soft inhalation and exhalation.

Three Requirements for Exercising Qigong.

Being relaxed, calm and natural are the three requirements for exercising qigong.

1. Being relaxed: The whole body from the top to the toes should be relaxed without any tension

from the very beginning of practicing qigong. The relaxation is so extensive that the body, joints, thinking, emotion, mental state and visceral organs should all be relaxed. Generally speaking, at the beginning it is not easy to achieve such a state of relaxation, but gradually complete relaxation is possible.

2. Being calm: When practicing qigong the environment should also be quiet. Only when the emotions are calm will the brain become tranquil.

3. Being natural: This refers to the posture, respiration, emotion and environment. All these should be natural.

Points for Attention in Qigong Practice.

Although there are various kinds of qigong, care must be taken about the following points no matter which kind of qigong is practiced.

1. Qigong should be practiced earnestly and sincerely. One must firmly believe that qigong is able to mobilize the internal energy and has the effect of preventing and treating disease and promoting the health. So, before the practice it is advisable to learn the theory and method of qigong as much as possible, and to be familiar with all the main points. Persistent practice leads to good results.

2. All intense activities (either physical or mental) should be stopped 20 minutes before practice so as to relax the muscles all over the body and calm the mind. One must have ease of mind during practice. If there is anything unhappy, one must try to comfort oneself and to set the mind at rest. If the vexation cannot be removed, it is better to go outside to calm down and start the practice only after the emotions are calm.

3. It is desirable to have a secluded place with trees, flowers and fresh air for practicing qigong, for example, a park, a forest or the edge of a lake. However, a quiet bedroom is also an ideal place. It should be noted that prevention from direct exposure to sunshine in summer and exposure to cold wind in winter is essential.
4. The bladder and bowel should be emptied before practice. The clothes should be loosened to facilitate muscle relaxation, smooth breathing and circulation of qi and blood. If a lying position is adopted, it is better to take off the outer clothing.
5. Practice can be scheduled according to the practitioners constitution, work or condition of illness. If qigong is practiced for therapeutic purposes, it may be performed 4~ times a day, 1 hour each time, once before getting up and then after going to bed, and once or twice each in the morning and in the afternoon. If it is practiced for strengthening the health, once in the morning and in the evening for 1-2 hour is enough. Practice can be continued in the menstrual period, but too much effort should be avoided, and the mind should be concentrated on the epigastrium but not on the lower abdomen. However, for those with prolonged and excessive menstruation, the practice should be suspended.
6. For beginners It is usually difficult to be calm. if this occurs, there is nothing to worry about. One should not be upset or give up the practice. Tranquilization is an important factor for successful practice of qigong, so it should be mastered. The key to tranquilization is induction in a proper way (see above).
7. When one becomes tranquil, some visual or auditory hallucination may occur. In addition, there may be a heavy feeling in the head and shoulders, swaying of the body, twitching of the muscles, hotness in the lower abdomen or throughout the body, or itching on the skin. If so, one should stay calm and not be disturbed by these reactions.
8. During practice, it is important to combine the motion with qi and the qi with the will, so that the will, qi and motion can be well integrated. This not only makes the action integral, graceful and comfortable, but also produces the best effect.
9. During the period of practice, diet should be regulated. Generally speaking, after practice digestion and metabolism are increased and there is weight gain. This is beneficial to those with weak constitutions or chronic diseases, but not to those with obesity or hyper tension. So, the diet should be arranged according to each individual case.
10. When finishing practice, stand or sit up slowly with no violent movements. Open the eyes first, and then massage the head and face. Begin to move gradually.
11. It is better to select different kinds of qigong exercises for persons with different constitutions and different diseases. However, the simplest exercises should be learned first.