

The Jing Mai and the Mai Qi

1.1 The Physiology of the Jing Mai

Mai is the Chinese term for blood vessels. Those blood vessels which travel along the channels are referred to as the *Jing Mai*. Together with their branches they form a network which (externally) covers the entire surface of the body and (internally) penetrates to its deepest levels. They conduct the *Qi* and *Blood* and enable blood to permeate the entire system, completing the circulatory process. Their pulse beats have a close relationship to respiration and therefore to *qi*, as the lungs rule the *qi*.

The *jing mai* are distributed evenly throughout the body in a pattern similar to the rivers and streams flowing through the earth. Internally they connect directly to the heart and externally they spread through the skin, muscles and connective tissues in a criss-cross pattern, carrying the blood as they go.

1.2 The Function of the Mai Qi

Pulse beats are produced mainly by the *mai qi*, which means by a contracting and expanding activity in the walls of the *jing mai*. The *mai qi* not only obtains continuous nourishment from the prenatal kidney essence and the postnatal stomach essence, but also is founded on *Ying Qi* and *Wei Qi*. Blood circulation is continuous and is therefore yang in nature; but the essence substance contained by the blood vessels is yin. Hence the *mai qi* is yin within yang. *Ying qi* and *wei qi* are produced by the spleen and stomach. *Ying qi* produces yin (blood), the function of which is to nourish the entire body, and *wei qi* protects the superficial part of the body. *Ying qi* is located at the level of the blood, so it circulates in the *jing mai* with the yin (blood). *Wei qi* is a type of yang *qi* and it circulates outside of the *jing mai*. These interacting internal-external, yin-yang factors generate the pulse beats.

1.3 Direction of Blood Circulation by Stomach Qi and the Zong Qi; the Consequential Theory of Blood Flow Through the Jing Mai following the Movement of Qi

The theory of blood flow through the jing mai following the stomach qi and *Zong Qi* proposes that circulation results from interaction between the jing mai and yang qi. The jing mai belong to yin and the qi belongs to yang. When the yin jing mai and the yang qi combine, pulse beats are produced — the yang qi creates a pump-like movement, forcing the blood through the jing mai. The yang qi includes the stomach qi and the zong qi.

1.4 Significance of the Wrist Pulse and the Relation between Respiration and Blood Circulation

There are twelve jing mai which together permeate the entire body, and which are individually reflected at the wrist area of the hand *Tai Yin* (lung) channel. This channel travels downward through the throat and connects with the lungs, forming most of the respiratory tract. The throat is the gateway through which qi enters and exits, and the lung is the venue for exchange of qi. It is also the meeting place of the “hundred vessels” and its *yuan* point, L-9 (taiyuan), is the great meeting place of all blood vessels. This point is located at the wrist. The surrounding region is therefore used to gauge changes to the qi in each of the jing mai and *Zang Fu*. One inhalation and one exhalation is called one respiration and according to ancient calculations a normal person has 13,500 respirations every day. Blood moves forward through his or her channels by 6 cun per respiration and over a twenty-four hour period covers 81,000 cun. However, according to present day calculations, a normal person has 24,000 to 26,000 respirations per day. Both ancient and modern sources agree that there are basically four pulse beats per respiration.

Pulse Positions and Diagnostic Techniques

2.1 The Three Pulse Positions: Cun, Guan, Chi

In diagnosing the pulse, the patient extends and relaxes his arm with his palm facing upward.

Behind the wrist there is a prominent bone (the styloid process of the radius) which marks the guan position. In front of the guan position is the cun position, belonging to yang, and behind the guan position is the chi position, belonging to yin.

The physician finds the pulse by first locating the guan position with his middle finger. His index and ring fingers then naturally locate the cun and chi positions.

There is, however, a small minority of people whose pulses cannot be felt at these positions. They are found at the external aspect of the wrist and are called opposite guan pulses (*Fan Guan Mai*). Some people have these pulses at one wrist, some at both wrists. These pulses do not indicate disease but result from a normal anatomical variation.

2.2 The Three Positions of the Zang Fu Organs and the Difference in Male and Female Pulses

Pathologies of the zang fu organs are reflected at the wrist pulse, and each organ has an individual position. The cun position on the left wrist belongs to the heart. The guan position on the left wrist belongs to the liver and gall bladder. The chi position on the left wrist belongs to the kidneys, small intestines and bladder. The cun position on the right wrist belongs to the lungs. The guan position on the right wrist belongs to the spleen and stomach. The chi position on the right wrist belongs to the "Gate of Life" (*Ming Men*) and large intestine.

However, this is only one idea of how the six positions on the left and right hands relate to the zang fu organs.

Another idea expressed by Wang Shù Hè in his book *Mai Jing* states that the left hand cun pulse, which he calls *Ren Ying*, registers all attacks by external disease and all external symptoms, and that the right hand cun pulse, which he calls *Qi Kou*, registers all internal diseases and all internal injuries. However, this idea has not found favor with physicians of the present era and is not considered of primary importance. It has been included only for reference.

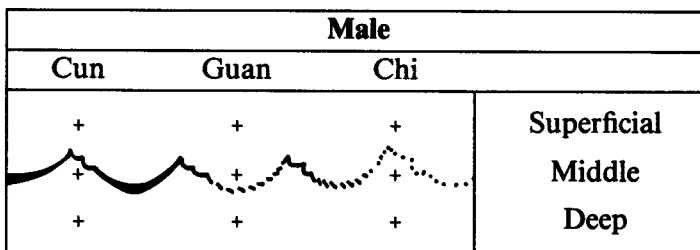
In the *Nei Jing* the arteries at the side of the neck are called *ren ying* (ST-9) and the arteries at the three wrist positions are called *qi kou*. Comparing these pulses is an ancient technique of diagnosing diseases of the whole body.

The *Mai Jing* calls the right and left chi pulses *Shen Men* and uses them principally to diagnose changes in the yin and yang balance of the kidneys. When the kidney yin and yang are strong, the body is strong, but when the kidney yin and yang are weak the body is deficient and failing. If there are no pulses at the chi position it means the kidney yin and yang are very weak and the disease is extremely serious.

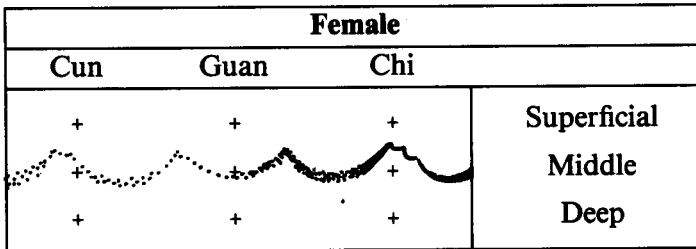
Both men and women have a slight yin-yang imbalance which is reflected as a slight difference between the right and left pulses. The left is yang and the right is yin. Men have more yang qi. So, provided their qi is well regulated, their left hand pulse is stronger. Women have more yin blood. So, provided their qi is well regulated, their right hand pulse is stronger.

When the cun and chi positions are compared to each other, the cun is more yang and the chi is more yin.

Males have more yang qi and therefore their cun pulse should be stronger than their chi pulse.



Females have more yin blood and therefore their chi pulse should be stronger than their cun pulse. When pulse strengths are opposite to this pattern it indicates disease.



2.3 Seven Diagnostic Techniques and Nine Conditions

The seven techniques of diagnosis include the superficial, middle, deep, upper, lower, left and right techniques.

The superficial technique is used to determine the presence of an external disease caused by an external attack.

The middle technique is used to determine the presence of a pathology of the spleen and stomach.

The deep technique is used to determine the presence of an internal injury or internal disease.

The upper technique refers to the pulse at the cun position and the lower technique refers to the pulse at the chi position.

The left technique refers to the pulse of the left hand and the right technique refers to the pulse of the right hand.

The diagnostician needs to compare the upper to the lower and the left to the right.

The seven techniques are used to establish the symptoms and causes of a disease.

The nine conditions are diagnosed by applying pressure from the superficial through to the medium and deep levels in each of the three positions (cun, guan, chi). The pulse must be felt for at least five beats at each level to establish a clear pattern. The three levels at the three positions comprise the nine conditions.

2.4 Using the Wrist Pulse to Distinguish Disease Changes Over the Whole of the Body

Generally, the cun pulse is used to diagnose diseases from the diaphragm to the crown, the guan pulse is used to diagnose diseases from the navel up to the lower diaphragm and the chi pulse is used to diagnose diseases below the navel. The three left positions are used for diseases on the left side of the body and the three right positions are used for diseases on the right side of the body.

The upper position is used to diagnose the upper body, the middle position the middle body, the lower position the lower body, the left hand to diagnose the left side of the body and the right hand to diagnose the right side of the body.

Thus, the area and nature of the disease can be determined from the wrist pulse. For example, if the ribs on the left side of the body are painful, the left guan pulse will be wiry and tight.

Pulse Positions		
<i>Left</i>	<i>Area</i>	<i>Right</i>
Cun	Diaphragm to Crown	Cun
Guan	Navel to Diaphragm	Guan
Chi	Navel to Feet	Chi

Pulse Depths		
<i>Left</i>	<i>Area</i>	<i>Right</i>
Superficial	Upper Body	Superficial
Middle	Middle Body	Middle
Deep	Lower Body	Deep

The Normal Pulses of the Five Organs and Their Different Qualities

3.1 The Different Levels of the Normal Pulses

The normal pulses of the five organs must be felt on all three levels to determine a pattern.

At the superficial level the pulses of the heart and lungs can be felt. At the deep level the pulses of the kidneys and liver can be felt. Between the superficial and deep levels at the middle level the pulses of the spleen and stomach can be felt.

3.2 The Different Qualities of the Normal Pulses

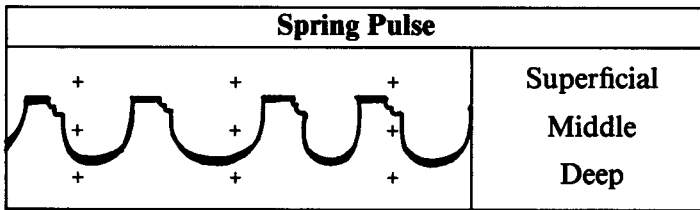
The superficial pulse at the heart position feels big and scattered. If slight pressure is applied by the fingertip, the pulse feels rough and big. If more pressure is applied the pulse feels broad, big, scattered and without strength. The superficial pulse at the lung position feels choppy and short. If slight pressure is applied by the fingertip, the pulse feels blocked and choppy. If more pressure is applied the pulse feels short and hasty. The deep pulse at the liver position feels long, slightly wiry and tight. The deep pulse at the kidney position feels full, strong, slippery and soft. The middle pulse at the spleen and stomach position feels regular, neither fast nor slow.

Both the kidneys and ming men are felt at the chi position. According to recent findings, ming men is located between the two kidneys. Even though the ancients say that the left chi pulse belongs to the kidney and the right chi pulse belongs to ming men, actually the weakness or strength of the yang yuan qi can be felt at both chi pulses.

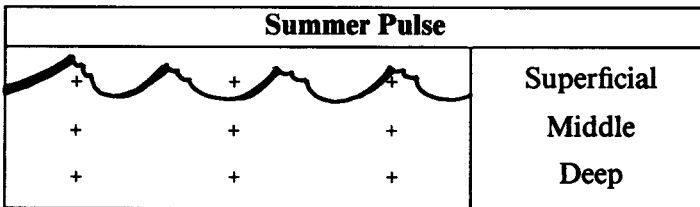
3.3 Harmonious Pulses of the Four Seasons

The human body is subject to influence by climatic changes over the four seasons. To maintain homeostasis there are regular physiological responses which bring the body into harmony with the seasons. These changes are reflected on the pulse.

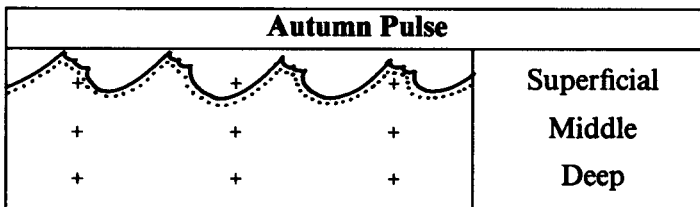
During spring the yang qi gradually intensifies. Simultaneously the tension of the pulse gradually increases and becomes wiry.



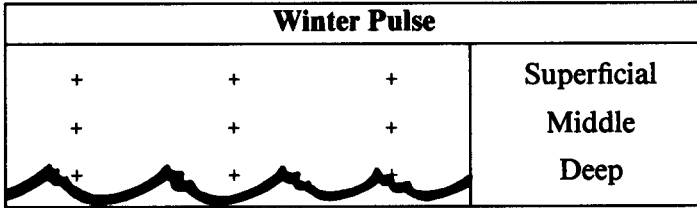
During summer the climate becomes hot and the pulse overflows (like a hook).



During autumn the yang qi gradually diminishes and the pulse becomes empty, floating, soft and fine (like a hair).



During winter the climate becomes cold and the pulse becomes deep and strong (like a stone).



If the wiry pulse, hook pulse, hair pulse and stone pulse are each felt in their respective seasons and are combined with a regular pulse, not too fast and not too slow, the body is healthy.

When these pulses are felt in combination with a strong full pulse it usually indicates a disease caused by external attacks or excessive perverse qi.

When these pulses are felt in combination with an empty, weak, thin or minute pulse it usually indicates an internal injury with a deficiency of upright qi.

However, when analyzing the seasonal and disease pulses, the most important factor is the state of the stomach qi. When the pulse contains stomach qi, it has shen and a pulse with shen is regular, not too fast and not too slow. For instance, a weak and minute pulse with regularity indicates *Shen* (stomach qi). This means that although the symptoms are very severe they can still be treated.