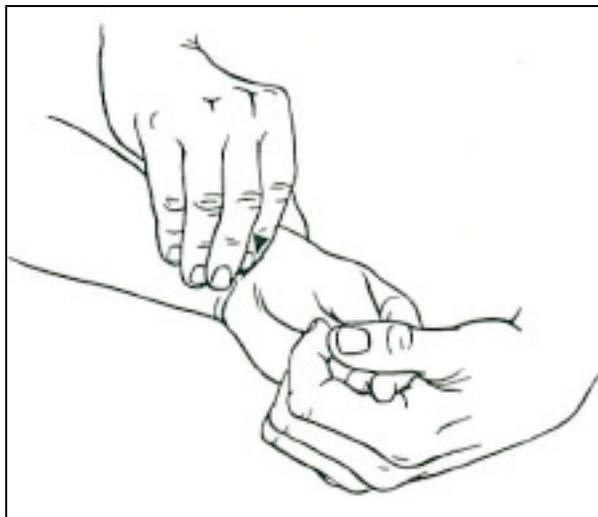


Dragon Rises Seminars

Contemporary Chinese Pulse Diagnosis



Student Handbook

(Introductory Level)

'The knowledge of the pulse is absolutely indispensable for the practice of true acupuncture, which is based on treating the root condition. Using only memorized formulae and treating only visible problems does not constitute real acupuncture.'

- Soulie de Morant

Information from Dr. John Shen as interpreted by Dr. Leon Hammer.

Compiled by Karen Bilton.

Contributions by Brandt Stickley, Hamilton Rott, Brian La Forgia, Helen Miller and Ross Rosen.

Introduction	1
History of Contemporary Chinese Pulse Diagnosis	1
Why pulse diagnosis?	2
Potential of Pulse Diagnosis	2
Limitations of Pulse Diagnosis	2
Historical Derivations - Systems of Pulse Diagnosis	3
The 3 Depths	4
Three Depths on the Entire Pulse	4
Qi depth	4
Blood depth	4
Organ depth	5
Three Depths in the Principal Positions	5
The Pulse Positions	6
The Principal Positions	6
The Complementary Positions	7
Pulse Positions (diagram)	8
Methodology	9
Large and Small Segments of the Pulse	9
Large Segments	9
Small Segments	10
The Pulse Examination	10
What Is The Normal Pulse	10
Characteristics of the Normal pulse	11
Rhythm and Rate	11
Rhythm	11
Rate	13
Stability	15
Stability of the Heart and Circulation	15
Stability of the Blood	15
Stability of Qi	16
‘Qi Wild’	16
Wave Forms	17
Normal	17
Hesitant	18
Flooding Deficient	18
Flooding Excess	19
Hollow Full-Overflowing	19
Suppressed	20
Palpating the Principal and Complementary Positions	21
Left and Right Special Lung Position	21
Neuro-psychological Position	21
Left Distal Position	22
Left Diaphragm	23
Left Middle Position	24
Left Proximal Position	25
Right Distal Position	26
Right Diaphragm	26
Right Middle Position	27
Right Proximal Position	28

Qualities	29
Volume	29
Robust Qualities	29
Reduced Qualities	31
Depth	38
Superficial	38
Submerged	41
Width	42
Wide	42
Narrow	44
Length	45
Extended	45
Diminished	46
Shape	46
Fluid Qualities	46
Non - Fluid Qualities	47
Miscellaneous Shape Qualities	49
Qualifying Terms	50
Anomalous Qualities	51
Commonly Confused Qualities	52
Changing Intensity and Changing to Absent	52
Slippery and Separating	52
Choppy, Rough Vibration and Slippery	52
Robust Pounding and Slippery	52
Yielding Hollow Full-Overflowing	52
Absent and Empty	52
Thin and Tight	53
Interpretation	54
Steps in interpretation	54
Broad Focus – Large Segment	54
Closer Focus - Principal and Complementary Positions	55
Integration of Pulse Signs	56
Discussion of Syndromes	58
Trauma and Shock	58
Dr. Shen’s Heart Patterns	58
Heart Qi Agitation	59
Heart Qi Stagnation	61
Qi Trapped in the Heart	61
Heart Qi Deficiency	62
Heart Yang Deficiency	63
Heart Blood Stagnation	64
Heart Blood Deficiency	64
Retained Pathogens	66
Toxicity	66
Parasites	66
Damp and Heat	66
Appendices	67
Appendix 1.	67
Hammer-Qualities Classified According to Sensation	67
Appendix 2.	72
Classification of Terminology	72

Appendix 3.	73
Summary of Methodology for Interpretation	73
Appendix 4.	77
Interpretation of Qualities - Activity and Substances	77
Appendix 5.	80
Interpretation of Pulse Qualities and Psychological States	80
Appendix 6.	82
Interpretation of Qualities in Complimentary Positions	82
Appendix 7.	85
Dr Shen Formulas	85
References	87

INTRODUCTION

The material presented in this workshop is intended to fulfill two purposes. The first is to provide the participants with an immediately useful and relevant body of information to take into the clinic. The second purpose is to introduce many of the major concepts and methods of Contemporary Chinese Pulse Diagnosis, a system of pulse diagnosis based on experiential medicine.

This workshop is not intended to be an exhaustive presentation of Contemporary Chinese Pulse Diagnosis. The more relevant and commonly encountered aspects of this system are emphasized in this presentation. A sound grasp of these principles and practices will prove immediately useful, and provide a strong foundation for further study of this method of pulse diagnosis. For a more complete understanding it is necessary to consult Dr. Hammer's book, *Chinese Pulse Diagnosis, A Contemporary Approach*.

HISTORY OF CONTEMPORARY CHINESE PULSE DIAGNOSIS

Contemporary Chinese Pulse Diagnosis is the result of many years of collaboration of Leon Hammer, MD and John HF Shen, OMD. Dr. Shen began his studies during the 1930's in Shanghai with members of the Ding family. This family was a prominent lineage of respected Chinese medical physicians who operated a formal school to educate people in their tradition.

Due to the prevailing political conditions in China during the 1940's, Dr. Shen fled his homeland and settled in Taiwan in 1949 where he worked for 12 years. Following this he traveled extensively spending a large part of his time in Southeast Asia including Vietnam, before migrating to the USA in 1971. During this period it is believed that he possibly encountered a system of pulse diagnosis handed down from father to son for centuries in the Mekong delta region of Vietnam. Quang Van Nguyen documents this model in his book *Fourth Uncle in the Mountain*, a memoir of a traditional Vietnamese-Chinese medical doctor relating to his medical training by his father and his father's surrogates. The pulse positions described in this text are nearly identical to that in *Contemporary Chinese Pulse Diagnosis*. (Nguyen, Quang Van, 120)

In his 60 years of clinical practice Dr. Shen treated hundreds of thousands of patients. This allowed him to refine his practice of pulse diagnosis and develop new diagnostic theories based on his clinical observations and experience. His work represents a coalescence of several of the many lineages of Chinese Medicine that existed prior to the standardization of Traditional Chinese Medicine by the Chinese Communist rule. The secrets of these methods were closely guarded and survived for many centuries by the oral tradition.

Dr. Hammer, MD, a graduate of Cornell University Medical College, began his medical career as a psychiatrist. He studied with pioneers in Bioenergetics, and spent 7 years at the Psychoanalytic Institute in New York. As a peer of Maciocia he began his study of Oriental medicine in England under the guidance of Dr. JD van Buren. In the early 1970's after his return to New York he began an apprenticeship with Dr. Shen that lasted until his death in 2001. During this time Dr. Hammer documented the pulse system used by Dr. Shen including evolving concepts based on the combined experience of their medicine. Dr. Hammer's works include *Chinese Pulse Diagnosis, A Contemporary Approach* and *Dragon Rises, Red Bird Flies, Psychology and Chinese Medicine*.

It thus becomes evident that Contemporary Chinese Pulse Diagnosis is rooted in a long Oriental medical tradition. Under normal circumstances this valuable information would be inaccessible to those outside the lineage. However, due to the determined work of these gifted men current day practitioners of Oriental medicine are able to study this method.

WHY PULSE DIAGNOSIS?

Pulse diagnosis provides sound guidance in clinical situations, even in complex conditions. For example, Li Dong-Yuan's theory of Yin-fire is a pattern characterized by mutually engendering pathologies of Liver qi stagnation, Spleen qi deficiency, Kidney Yin deficiency and deficient heat. The pulse can reveal the level of complexity described by such a theory objectively. In the words of Andrew Tseng, "You can study medical texts for ten years and find no such patients in the clinic; you can work in the clinic for ten years and find no such patients in any medical book" (Johns, 3).

Pulse diagnosis gives the practitioner a measurable baseline for normal function. It is a sensitive diagnostic tool that measures deviations from this normal physiology and identifies the process of disease almost from the beginning. Thus, the pulse exhibits changes prior to the onset of overt symptoms, allowing valuable time for intervention before the disease process is entrenched. Hence, it is a valuable tool for preventive medicine.

The pulse reveals the "terrain" (body mind condition) including vulnerabilities that precede disease. Identifying the vulnerabilities that challenge a patient is an important step in understanding the etiology of any condition. The pulse is also useful in discerning threatening conditions, such as an impending stroke.

The pulse is a relatively objective finding. For instance, when patients are not reporting or are unaware of their condition the pulse can provide a basis for including this information in the formation of the diagnosis and treatment plan.

Finally, the pulse provides an exquisitely sensitive and reliable assessment of the mental and emotional state of the patient. This is especially useful in situations where people find issues difficult to reveal. Gaining access to this information without the resistance so commonly encountered in discussing these delicate aspects of the patient's presentation is critical to the competent management of their case.

POTENTIAL OF PULSE DIAGNOSIS

The pulse can reveal constitution, habits, external factors, the state of the mind and spirit, mental status and behavioral style. It records the influence of past events such as trauma in utero, at birth or early in life. The pulse forms a sound platform for preventive medicine. It can monitor new developments and the progress of treatment. The pulse also provides insight into the expected course of treatment.

LIMITATIONS OF PULSE DIAGNOSIS

The pulse can be susceptible to transitory influences and may change according to recent events such as emotional distress, stimulants, sleep deprivation, medications, or untoward dietary habits. With experience the transitory influences can be distinguished from the enduring messages.

HISTORICAL DERIVATIONS - SYSTEMS OF PULSE DIAGNOSIS

Methods of pulse diagnosis in use in Oriental medicine employ differing structure and organizations in terms of pulse depths and organ positions. In Western Europe the Wang Shu-he interpretation is favored, while on main land China and, for the most part in the Orient, the positions reflect that of Li Shi Zhen. The pulse system used by Dr. Shen that forms the basis of Contemporary Chinese Pulse Diagnosis incorporates concepts from the Neijing Suwen (~2-3rd century BC) and interpretations of the work of Li Shi Zhen (1564) and Zhang Jie-Bing (1624).

Contemporary Chinese Pulse Diagnosis is a 3-depth system where the Qi and Blood depths represent the contributing strength of these substances to the organism. The Organ depth relates information about the state of the substantial organs. In this system preference is given to the Zang or Yin organs for the major or 6 principal positions due to their primary role in physiological function. The Fu or Yang organs are found in the complementary positions.

This model has its roots in the Neijing Suwen. This classic weighs more importance with the storing function of the Zang or Yin organs compared with the transporting function of the Fu or Yang organs. Exception is given to the Stomach or 'the Sea of Nutrients' as it is the origin of the 'Pure Essence' of the Spleen that circulates to nourish the 5 Zang. Therefore the Yin organs (Heart, Liver, Lung, Kidney Yin, Kidney Yang) and the Stomach are seen as the significant energetic factors and are assigned the 6 pulse positions. (Maoshing Ni translation Neijing Suwen, 47)

The Neijing also cites the radial pulse as being an anatomically correct representation of the body. The distal positions are said to reflect the chest, the middle positions the epigastrium to the abdomen, and the proximal positions the abdomen to the feet. (Maoshing Ni translation Neijing Suwen, 69) Li Shi Zhen (1564) further elaborates this model of the Three Burning spaces by identifying an association of the Gall Bladder with the Liver, the Spleen with the Stomach, and the Intestines and Bladder with the Kidney pulses. (Pulse Diagnosis Li Shi Zhen, 3) Palpation of the superficial, middle and deep aspects of the pulse is also described here. (Pulse Diagnosis Li Shi Zhen, 5)

Later, Zhang Jie-Bing (1624), elaborating Wang Shu-He's model (a 2-depth system), lists the sternum as the superficial pulse in the right distal location, a prelude to Dr. Shen's diaphragm position. It is also interesting to note that Zhang Jie-Bing's notation places the Large Intestine in relationship to the left proximal pulse and the Small Intestine in relationship to the right proximal pulse, though in a more superficial position. Dr. Shen's positioning of the Pericardium is also somewhat in agreement with Zhang Jie-Bing.

Contemporary Chinese Pulse Diagnosis further develops the Triple Burner model of Neijing Suwen. The six principal positions correspond to the major Yin organs. Exceptions are the right middle position (pliable qualities relate to the Spleen and hard qualities to the Stomach) and the right proximal position (signifies Kidney Yang unless pathology in the Bladder overrides this pulse). The 3 depths in these positions represent the state of qi, blood and Yin organs or solid organs. Information about the Yang organs is conveyed by the complementary positions, and the arrangement of the organs at the wrist is anatomically true.

Conversely, the Wang Shu-He (280 CE) 2-depth system of pulse diagnosis sees a deviation from the Triple Burner model. This system is one of many first mentioned in the Nan Jing (200 CE). It assigns pulse positions according to Zang Fu elemental partners with the Zang or solid organs felt deep and the Fu or hollow organs superficial. With this arrangement of the organs, the anatomical consistency of the body with that mapped by the radial pulse is not evident. The Wang Shu-He based 2-depth system is what predominates in teaching institutions in Europe and the USA and is most commonly used by practitioners of these countries today.

THE THREE DEPTHS

Before we continue we must delineate the difference between depth and level. Depth refers to the vertical dimensions of the radial artery from the anterior to the posterior aspects. There are three depths. The Qi depth is the most anterior or superficial and the Organ depth the most posterior or deep with the Blood depth located between these. Level refers to the horizontal dimensions of the radial artery from the wrist towards the elbow. There are three levels. The most distal level refers to the Upper Burner, the most proximal level to the Lower Burner, and the Middle Burner is between these.

The three depths are at prescribed and fixed locations (proportional allowance is made for the size of the individual). The Qi depth, the most superficial is not necessarily found where the impulse is first evident. The Blood and the Organ depths are found at precise locations in relation to the Qi depth. In the complementary and distal positions there are no clear cut three depths, though in any one of these positions there are some qualities which are felt more superficially and others more deeply.

In order to feel the qualities accurately, it is important to feel the pulse at the right depth or with the correct pressure. Another prerequisite to achieving an accurate reading of the pulse is the comfort of both the examiner and the patient. Significant amounts of time in the first class are dedicated to accurately locating the depths. Other depths can be accessed with increasing skill, identifying, for example, retained pathogens.

THREE DEPTHS ON THE ENTIRE PULSE

QI DEPTH

The Qi depth is the most superficial portion of the pulse and is representative of the state of qi of the organism. These factors provide the body with function, shape and force. There are three major qualities evident at this depth. Pliable or soft sensations (Yielding, Diminished etc) indicate qi deficiency and are usually the result of over work or over exercise. Hard qualities (Taut, Tense, Tight, Wiry) show overwork of the 'Nervous System' and reflect variations of qi stagnation and Yin deficiency with heat. Moving qualities (Slippery) at the Qi depth indicates Qi deficiency if the pulse rate is Slow and excess sugar in the blood if the rate is Rapid.

BLOOD DEPTH

The Blood depth is the middle aspect of the pulse and represents the condition of blood and pure fluids. Blood gives the body suppleness and substance and provides nourishment. The Blood depth is palpated for a distinctly different set of messages when moving from the Qi depth with increasing pressure (blood deficiency), than when starting from the Organ depth and gradually decreasing pressure (Blood Unclear, Blood Heat, Blood Thick).

Four characteristics of the pulse may be evident at this depth. The Thin quality tells of blood deficiency. Wide qualities (Blood Unclear, Blood Heat, Blood Thick) indicate an excess condition in the blood. The absence of the Blood depth or a very Diminished sensation is termed Hollow and tells of blood and circulatory deficiency or hemorrhage. Slipperiness at the Blood depth represents excess or stagnant fluids or a turbulence associated with the circulation of qi.

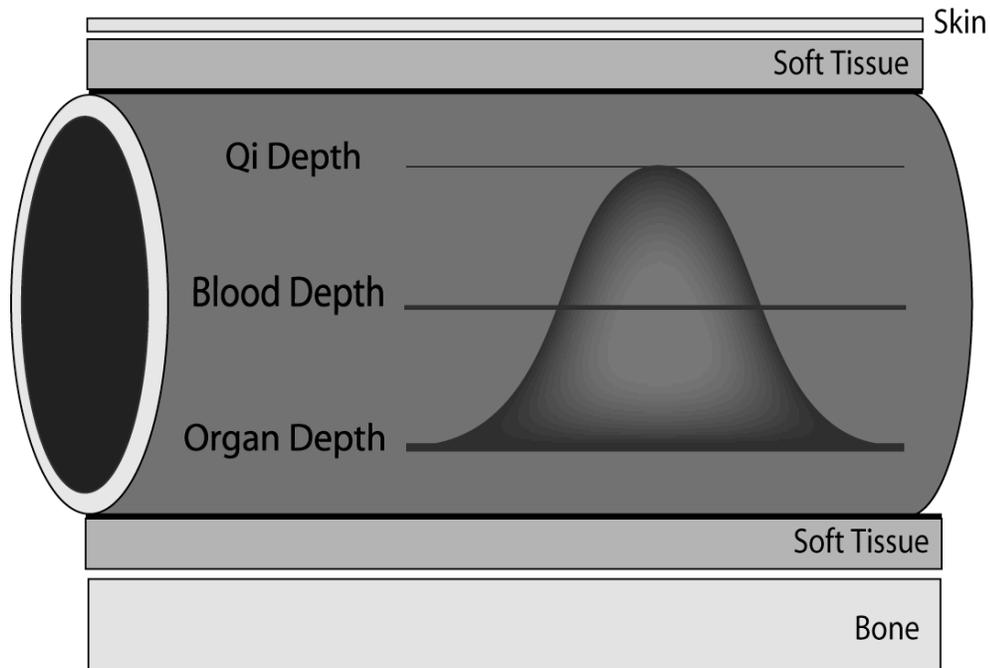
The Blood depth can be concurrently Thin (accessed from Qi depth to Organ depth) and wide (accessed from Organ depth to the surface). It is an indication of coexisting blood deficiency and heat. Many qualities can be simultaneously present on the pulse. If this is the case all are true and happening at the same time.

ORGAN DEPTH

The Organ depth is the deepest part of the pulse to be palpated and assesses the integrity of the Yin organs or organ system. Abnormalities at this depth reflect the most profound clinical finding of abnormal physiology and reflect conditions of deficiency, stagnation and dysfunction of the Zang organs.

THREE DEPTHS IN THE PRINCIPAL POSITIONS

In an individual position depth is a reflection of the integrity of that organ. While the Organ depth is the repository of information about the qi, blood, and yin of the Yin organ, the Qi depth tells us about its contribution to the total true qi, and the Blood depth about this Yin organ's contribution to the total blood of the organism. When the Qi and Blood depths are not accessible at any single individual position, the Yin organ is no longer making a full contribution to the total function. It is retaining the qi and blood for its own survival, a manifestation that we palpate at the Organ depth.



The 3 depths

THE PULSE POSITIONS

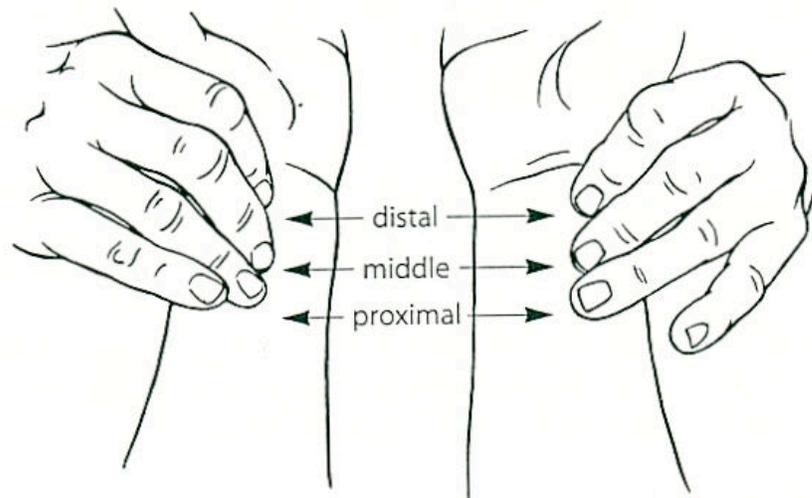
In Contemporary Chinese Pulse Diagnosis there are 6 principal positions and 22 complementary positions. In this pulse model the scaphoid bone is used for placement of index finger, and the other fingers fall into place. Fingers are further apart in heavier people and closer in thinner people. We do not use the styloid process recommended by the literature, because the distance between the styloid process and the scaphoid bone varies considerably from person to person.

THE PRINCIPAL POSITIONS

The single most important measure that assures accurate palpation of the pulse qualities is finding the main impulse. This is where the pulse is strongest and most clear. Individual pulses vary in their location medially and laterally so it is important to take the time to assure that the pulse is palpated on the main impulse.

The radial artery is explored longitudinally from distal to proximal. The middle and proximal positions are examined in this direction. Distal positions are explored horizontally from lateral (radial) to medial (ulnar) by the radial edge of the index finger. The reason for this is that the radial artery ends as a single vessel and splits into several smaller arteries. As the wave hits the vessel dispersion it spreads out horizontally from lateral to medial. To locate the distal positions the examiner rolls his or her index finger distally toward the scaphoid bone. The quality is accessed with the radial side of the index finger rather than the flat pad. It is important not to obliterate this position by using excessive pressure.

The distal position is located first, using the scaphoid bone as a landmark of reference. The middle and proximal positions are then located according to the size of the patient's wrist.



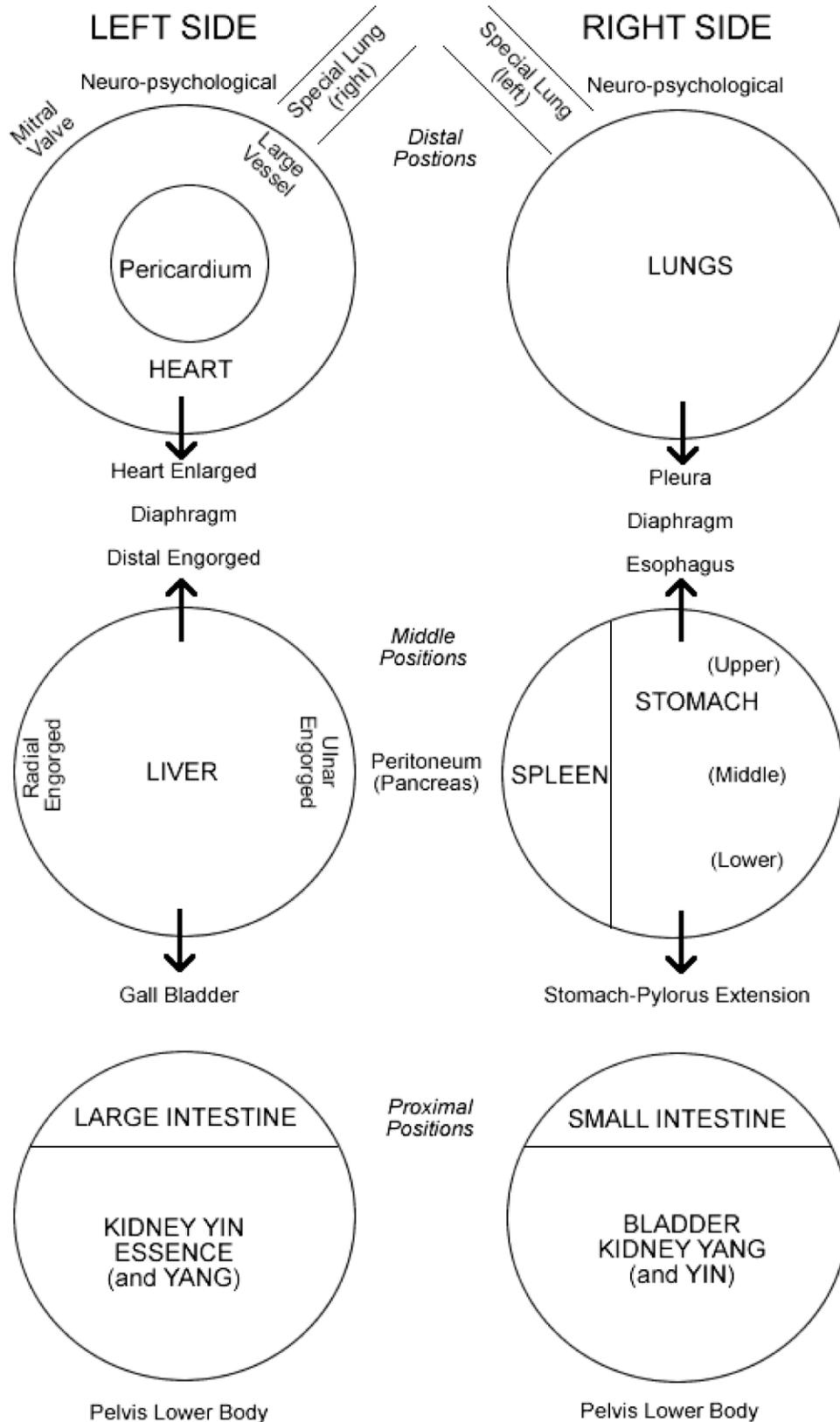
Principal Positions

THE COMPLEMENTARY POSITIONS

The complementary positions are medial, lateral, distal or proximal to the principal positions. Most of them are located in relation to a principal position. As mentioned, the three depths do not apply to the complementary positions. Qualities present in the complementary positions may vary at different depths. All of these qualities bear significance, even though the three depths do not apply. In the complementary positions, especially the Neuro-Psychological and Mitral Valve positions, the qualities are sometimes ephemeral so that one has to move around the position or wait.

See Fig. 2-1 Pulse positions according to Dr. Shen and Dr. Hammer (Hammer, 24-25).

PULSE POSITIONS (DIAGRAM)



METHODOLOGY

The methodology employed in this system of pulse diagnosis is logical and sequential. To develop the palpation skills necessary to use the pulse to its fullest potential requires acute attention to the sensations at one's fingertips and repeated practice of the technique. To obtain the best understanding of the information gained, interpretation of the pulse findings must occur within a rational framework.

The pulse is a means for the body to communicate its urgent messages to the practitioner. In order to fully appreciate the import of these messages, it is necessary to devote ample time, usually 30-45 minutes, in the first visit. Subsequent readings take much less time. Thorough and accurate first assessment enables one to form a sound diagnosis and treatment plan. Sound diagnosis ensures that the therapeutic intervention will offer the best outcome over a shorter period time.

As the first step in any examination we use both hands to access consistent messages of the entire pulse. This facilitates a clear comparison of sides, and a picture of the qualities present over large segments of the pulse. Primary considerations such as the rate, rhythm, and waveform are also best accessed using both hands.

Another feature of Contemporary Chinese Pulse Diagnosis is the use of rolling methods to access aspects of both principal and complementary positions. Soulie de Maurant and Maciocia document rolling the fingers as an integral part of pulse diagnosis. Maciocia states: "Nearly all ancient Chinese texts on pulse diagnosis say that the pulse is felt not by keeping the fingers absolutely still on the artery, but by moving the fingers in five different ways: (1) lifting tells you whether the pulse is Floating; (2) pressing (down) tells you whether the pulse is Deep; (3) searching (not moving the finger) is used to count the rate; (4) pushing (from side to side) tells you about the shape of the pulse (5) rolling (distally to proximally) tells you whether the pulse is Long or Short. Actually, in the past wai and nei did not refer to superficial and deep, but to lateral (strangely corresponding to the Zang organs) and medial (strangely corresponding to the Fu organs). This also somewhat coincides with Dr. Shen's technique of distinguishing lateral and medial aspects of the pulse by moving side to side" (Hammer, 27). Rolling is particularly important when assessing the distal positions, because of the tendency of the middle positions to overflow distally and obscure the sensations accessed in the distal positions.

LARGE AND SMALL SEGMENTS OF THE PULSE

LARGE SEGMENTS

The large segment of the pulse includes the rhythm, stability, and rate, also uniform qualities on the entire pulse, at the different Burners, and on the sides. The large segments also include common qualities found at the Qi, Blood, and Organ depths on the entire pulse.

Rhythm, stability, and rate are clinical issues that take precedence over any other quality or combinations of qualities in terms of diagnosis and treatment. Deviations from the normal of these three parameters of the pulse are generally the most critical of all signs in terms of seriousness of disharmony and order of treatment. Frequently, when the rhythm, instability, and rate are brought into order and balance, the other qualities and findings will automatically change.

SMALL SEGMENTS

Here we refer to the critical and dominant factors in the Yin organs. Each principal position gives us vital information about the functioning of that organ within itself and in relation to the organism as a whole. As previously mentioned, the Qi and Blood depths relate that organs contribution to the total qi, blood (and pure fluids) of the system. The Organ depth tells of the state of qi, blood, and Yin or 'parenchyma' of that particular organ. When the Qi and Blood depths are absent in a principal position, that organ is no longer contributing to the system and is retaining the qi and blood to maintain its own operation. This becomes important information to consider in the formulation of a diagnosis and treatment plan.

THE PULSE EXAMINATION

During any examination of the pulse it is important to maintain the comfort of both the patient and the practitioner. To allow the true reading of the pulse to emerge the patient must refrain from stimulants of any nature, and other excesses such as exercise, sex, work and food on the day of the exam.

1. Allow the patient several minutes to rest prior to the examination.
2. Take the rate - comfortable position and using all six fingers count for a full 60 seconds timed by a watch and not breath.
3. Begin to gather information – uniform qualities, rhythm - speeding up and slowing down.
4. Check for qualities above the Qi depth. Floating, Cotton, Full-Overflowing and Flooding Excess waves. If qualities are felt here it is a sign of pathology.
5. Palpate the Qi depth - Pliable verses Hard qualities.
6. Palpate the Blood depth
 - a. Palpating from superficial to deep:
 - i. Qualities such as Thin, Wide, Tight, Hollow and Slippery may be encountered
 - b. Palpating from deep to superficial:
 - i. Blood Unclear, Heat, Thick, Slippery, Rough Vibration and Choppy may be felt
7. Palpate the Organ depth.
8. Determine the waveform.
9. Qualities identified principal and complementary positions left wrist distal to proximal.
10. Qualities identified principal and complementary positions right wrist distal to proximal.
11. Final rate taken (count for 30 seconds then multiply by 2) and re-checking to clarify uncertainties or difficult qualities.
12. Rate on exertion taken – get patient to rotate arm vigorously at the shoulder, count for 10 seconds then multiply by 6.

WHAT IS THE NORMAL PULSE

The normal pulse is resilient, compressible, of moderate strength and with spirit. The qualities, intensity and amplitude are consistent over time and in each position. Seasonal variations occur in rare instances where there is little pathology. Normally the pulse is somewhat stronger on the right side in women, and on the left side in men.

CHARACTERISTICS OF THE NORMAL PULSE

The following pulse characteristics serve as a baseline and standard for health:

1. Rhythm - Consistently regular
2. Rate - Consistent with age
3. Quality - Compressible, resilient and elastic
4. Shape - Long, smooth and continuous without turbulence
5. Strength - Moderate with spirit - luster
6. Spirit - Moderate Spirit (languid, Leisurely, Relaxed, Slowed-Down) depending on body build
7. Root and depth - Balanced between superficial, middle and deep. The greatest strength should be in the root, at the deepest or Organ depth and becoming lighter as one ascends to the Qi depth. There is strength in the proximal positions. The pulse is deeper in heavy people and more superficial in thinner people.
8. Balance - Balanced between positions with the middle position occupying the most space, the proximal position the next most area and the distal position being the most confined.
9. Intensity (buoyancy, elasticity and resilience of the pulse) - Stable over time
10. Amplitude (height of the pulse) - Stable over time
11. Consistency - Qualities stable and consistent over time.
12. Wave - Sine curve that begins at the Organ depth and gradually rises to the Qi depth, and then subsides again to the Organ depth.

RHYTHM AND RATE

As discussed previously, rhythm, stability, and rate, as a large segment of the pulse, are vitally important in terms of diagnosis and treatment. “The integrity of the rhythm is the single most important aspect of pulse diagnosis,” (Hammer, 113) Rhythm and rate reveal significant information about the state of the Heart and Circulation. As Chinese medicine considers the Heart to be the ‘Emperor’, these factors are the central issue of the broader picture and take priority over all other considerations. In no uncertain terms, rhythm and rate are reflections of cardiac function, and overshadow the implication of all other findings.

RHYTHM

Rhythm is the most significant measure of Heart and circulatory function. In a normal pulse the beat is consistently regular. An abnormal rhythm refers to the pulse having an arrhythmia, skipping beats, or Changing Rate at Rest (speeding up and slowing down).

Arrhythmias are further categorized according to the following aspects: Does the change occur at rest? Is the rate measurable? Are there missed beats? If there are missed beats, are they consistent or inconsistent? How often does the irregularity occur? If there are no missed beats, is the change in rate occasional or constant, large or small? Consult chapter 6 of Chinese Pulse Diagnosis, A Contemporary Approach for further elaboration.

Rhythm at Rest - Arrhythmias

Arrhythmias refer to an alteration or change of the beat rhythm of the pulse.

Measurable Without Missed Beats

The rate is measurable and the pulse does not skip beats.

Change of Rate at Rest

Sensation: Pulse speeds up and slows down.

Interpretation: Heart qi agitation, if found occasionally. Heart qi deficiency if found consistently.

Rate Measurable With Missed Beats

The rate is measurable and beats are skipped.

Interrupted

Sensation: Misses beats irregularly, rate is clear.

Interpretation: Moderate Heart qi agitation and deficiency

Intermittent

Sensation: The pulse misses beats regularly, rate clearly discernable.

Interpretation: Heart qi, blood and Yang deficiency.

Rate Not Measurable With Missed Beats

The rate cannot be reliably counted and the pulse skips beats.

Interrupted

Sensation: Misses beats with no fixed cadence and no reliably assessable rate.

Interpretation: Severe Heart qi and Yang deficiency.

Hollow Interrupted Intermittent

Sensation: Misses beats too irregular to count rate, and Hollow.

Interpretation: Most severe Heart qi - Yang deficiency.

Rhythm at Rest – Pseudo Arrhythmias

These qualities are often confused for arrhythmias.

Hesitant

Sensation: Faltering, balking, feels as though the impulse hits all the fingers at the same time. Is considered a pseudo arrhythmia. There is no wave.

Interpretation: Heart Yin deficiency, obsessive-compulsive condition, mental overwork 'push pulse'.

Changing Intensity and Amplitude

Whole pulse

Sensation: a variation in strength and amplitude of the impulse (if found on First Impression).

Interpretation: Heart qi deficiency

Principal Position

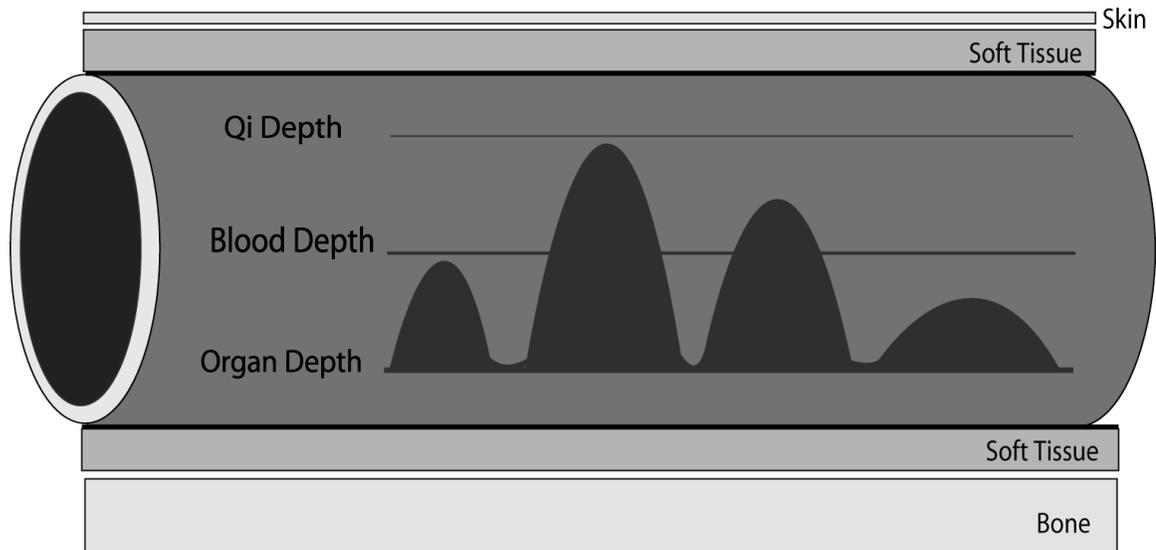
Sensation: A variation in strength and amplitude of the impulse in a principal position

Interpretation: Mild Separation of Yin and Yang of the organ associated with that position.

Complementary Position

Sensation: A variation in strength and amplitude of the impulse in a complementary position

Interpretation: Impaired function of the organ associated with the position.



Change of Amplitude and Intensity

RATE

Classically, rate has been correlated with conditions of heat and of cold. According to Dr. Hammer, “alteration from a normal rate is more often a sign of significant and far reaching processes than just heat and cold. It is most frequently associated with the Heart and the Circulation”. In this system, interpretation of rate represents the strength of the Heart and Circulation. Therefore, factors that impact rate are more likely to include situations of Heart shock rather than heat or cold. This includes trauma in utero, at birth, and emotional shock during life. Also alteration in the circulation of blood and qi due to physical insult ultimately affects the rate and Heart.

Emotional trauma or shock initially raises Heart rate. If the adult coping mechanisms that protect the Heart (the Small Intestine and Pericardium) have not yet matured in an individual, the ability of the Heart to return to normal function is limited. For this reason children are extremely vulnerable to the effects of trauma. If rate increase in response to trauma is not rectified, the Heart is unable to maintain elevated function for prolonged periods. Over time the Heart qi is depleted and the rate decreases (except in times of stress when a deficient Heart is unable to maintain stability and the rate may increase far in excess to what is ordinarily appropriate to the strain).

Similarly, significant physical trauma causes blood and qi stagnation in the periphery. In maintaining the circulatory demands of the organism, the Heart has to work harder to overcome the resistance. If there are ongoing consequences as a result of the injury, the Heart eventually tires decreasing the rate.

Resting Rates

Normal Resting Rates

According to Dr. Shen (Hammer, 152):

Age	Rate
Birth to 4 years	84-90/min
4-10 years	78-84/min
10-15 years	78-80/min
16-40 years	72-78/min
40-50 years	72/min
50+ years	66-72/min

Rapid Rate

Interpretation: Rapid rate is almost always due to recent shock (over time the Heart weakens and the rate slows). Also due to 'Nervous System Tense' and stress. Internal and external pathogenic heat (febrile illnesses) must be considered if currently active. Also a Rapid rate can exist temporarily if the Heart Qi is deficient and the person is under stress.

Slow Rate

In our times a Slow rate is related more to Heart function and the circulation of blood than to either excess or deficient cold. With modern innovations in heating the invasion of internal excess cold is less common, however, internally generated deficient cold (generalized qi and Yang deficiency) and external pathogenic cold must still be considered in rare instances.

Interpretation: Qi or Yang deficiency of the Heart, also poisoning (toxicity- very slow), Liver qi stagnation, exercise beyond one's energy, late stage atherosclerosis.

Rate on exertion

The Heart and Circulatory system should respond to the energetic demand of movement within certain parameters. An increase of 8-12 beats/min is considered normal. Changes outside this range are considered pathological.

To measure the rate on exertion the practitioner gets the patient to rotate their arm vigorously at the shoulder. As soon as the patient returns their arm to their side the rate is counted for 10 seconds then multiplied by 6. The method for assessing the change in rate on exertion will be demonstrated in the hands-on portion of class.

Normal - Rate increases by 8-12 beats/min

Heart blood deficiency - Rate increases by greater than 12 beats/min

Heart qi deficiency - Rate rises by less than 8 beats/min

Heart yang deficiency - Rate stays the same or decreases – a serious situation

STABILITY

Stability refers to the capacity of an organism to return easily to equilibrium after stress, and to its capacity to maintain operational parameters within functional limits over time. Apart from the regularity of the pulse, stability is associated with the steadiness of the amplitude, intensity, qualities, and rate, as well as the balance of Yin and Yang, and balance between pulse positions.

During a pulse examination we want to see balance and constancy. Lack of stability is an indication that the fundamental functioning of the organism is severely compromised. Instability can manifest in the Heart and Circulation, the blood and the qi. From the pulse it is possible to ascertain the fidelity of these essential systems and substances.

STABILITY OF THE HEART AND CIRCULATION

As discussed, Heart stability is reflected in a steady rhythm and rate. Instability of the Heart and Circulation creates a potential for cardiac episodes or heart attacks. Constant and large Change of Intensity, large variations in rates during a pulse exam and Intermittent less than every five beats are signs of Heart instability. A more alarming but unusual example is (Hollow) Interrupted Intermittent.

(Hollow) Interrupted Intermittent

Sensation: Rate not measurable, misses beats irregularly.

Interpretation: Severe Heart qi, blood and Yang deficiency.

STABILITY OF THE BLOOD

Stability of the blood is ascertained by the lack of bleeding or extravasation of blood from the vessels and capillaries. With instability of the blood the person is vulnerable to bleeding disorders.

Very Tense or Leather like Hollow and Rapid

Sensation: Qi depth feels very Tense, or hard and thick, like leather, Blood depth absolutely absent.

Interpretation:

With Rapid rate – Sign of imminent hemorrhage e.g. gastrointestinal bleeding.

With Slow rate – Hemorrhage has just occurred, and can reoccur.

Very Tense-Tight-Wiry and Hollow Full-Overflowing

Interpretation: Imminent stroke

STABILITY OF QI

The stability of qi is manifested in the contact between Yin and Yang. Yin supplies the substance and information and Yang the activity to all biological processes. If these factors lose functional contact it is a sign that the fundamental processes that are critical for the survival of the organism have been corrupted and the normal physiological processes are in chaos.

To further understand this concept, let's compare pulse qualities where qi is patent and in chaos. Take deficiency for example. The Feeble quality is a sign of significant deficiency wherever it is found, however Yin and Yang, although very weak, are still in contact. Conversely, Yin and Yang are out of contact in the Empty quality, where the Yin is not able to anchor the Yang. When this quality occurs in only one position, it is a sign of extreme dysfunction of the organ represented by that position (Separation of Yin and Yang). When the Empty quality is found on the entire pulse, Yin and Yang are out of contact in the entire organism. This condition is referred to as 'Qi Wild', one in which the person is at great risk of serious debilitating diseases such as cancer, autoimmune or degenerative conditions of the central nervous system.

Change of Intensity

Sensation: a variation in strength and amplitude of the impulse.

Interpretation:

Individual position: Relatively mild Separation of Yin and Yang in that organ.

Complementary position: it is a sign of impaired function of that organ or area.

(Whole pulse: Heart qi deficiency.)

Change of Qualities

Sensation: An example of a Change of Quality is the relatively hard Tense quality changing to the Feeble-Absent quality. Changes along the Taut-Tense-Tight-Wiry continuum do not constitute a Change of Quality.

Interpretation:

Individual position: Separation of Yin and Yang in the organ, extreme deficiency of Yin organ qi and blood.

Whole Pulse: 'Qi wild'

'QI WILD'

'Qi Wild' is a condition of extreme functional weakness in which, for one reason or another, the Yin and Yang of the entire organism has lost operative contact and are unable to support each other. The underlying condition is an extreme deficiency of either Yin or Yang or both in many individual organs where it is known as 'separation of yin and yang'.

Without the organizing or consolidating force of the yin, the lighter yang energies wander aimlessly to all parts of the organism, unable to function effectively in the channels and organs resulting in physiological disarray. Thus, the 'qi wild' is a condition characterized by chaos and represents a very serious physiological disorganization and disruption.

It can occur as a result of significant physiological insult to the fetus or newborn, severe early environmental deprivation, excess physical labor prior to age 10, sudden cessation of excess, exercise beyond a person's energy in early life, substance abuse and iatrogenic.

‘Qi Wild’ qualities

Changing Qualities in most of the principal positions or on the entire pulse, or on a side.

Empty; Leather; Minute; Scattered and **Yielding Hollow Full-Overflowing** on the entire pulse, or on a side.

Interpretation: Severe instability of the qi of the organism, serious illness imminent. The 'Qi Wild' person is highly vulnerable to serious and fast spreading, even life-threatening disease of a specific organ or entire organism within a short time (one to three years according to Dr Hammer).

WAVE FORMS

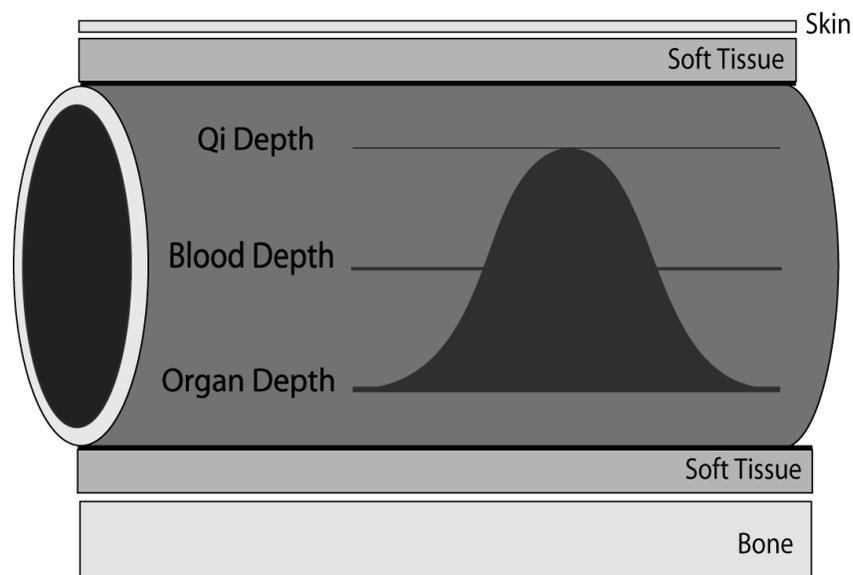
The waveform of the impulse is identified with both hands simultaneously while checking for consistent and uniform pulse qualities. In most situations the waveform is found on the entire pulse. It is a way of describing the impulse as it hits the finger of the examiner in its rise and fall from the Organ depth. It is a measure of volume and reveals vital information regarding the state of the qi, blood and organs of the organism. See Hammer, Fig.4-2, p.68.

Some waveforms (Hollow Full-Over Flowing, Flooding Excess) can be occasionally found in an individual position. If this is the case it is indicative of pathology in that organ.

NORMAL

Sensation: Sine curve that begins at the Organ depth and gradually rises to the Qi depth, then subsides again to the Organ depth.

Interpretation: A sign that qi or Yang activity is within normal limits.

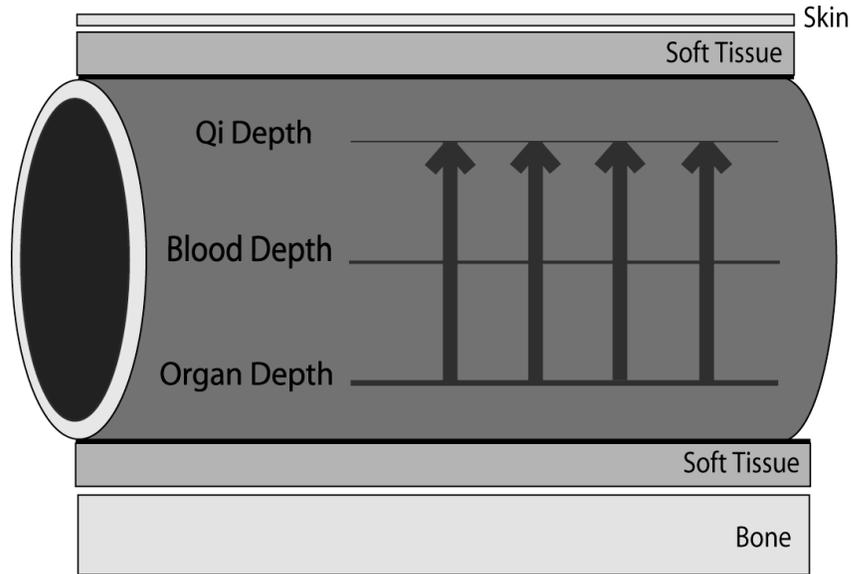


Normal Wave

HESITANT

Sensation: Gives impression of faltering and balking, no perceptible wave, occurs on whole pulse.

Interpretation: Sign of moderate Heart Yin deficiency. Mental “push pulse,” obsessive-compulsive behavior, tendency to ruminate or think on a single subject incessantly.

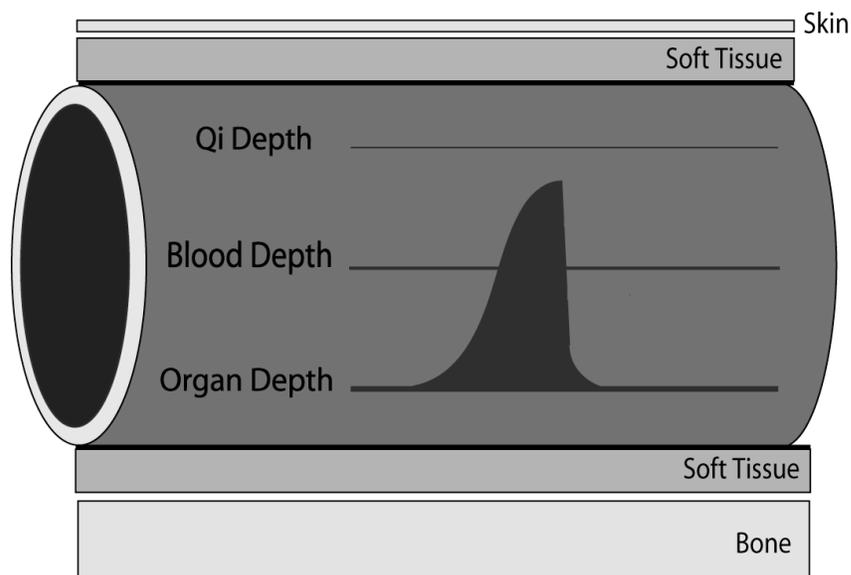


Hesitant Wave

FLOODING DEFICIENT

Sensation: The front part of the wave rises normally as a sine curve, reaches or almost reaches the Qi depth but then falls or precipitously drops out from beneath fingers.

Interpretation: Sign of qi deficiency of the Yin organs. What Dr. Shen called a physical “Push Pulse” denotes physical overwork or over exercise beyond one’s energy. Moderate qi deficiency (4th stage).

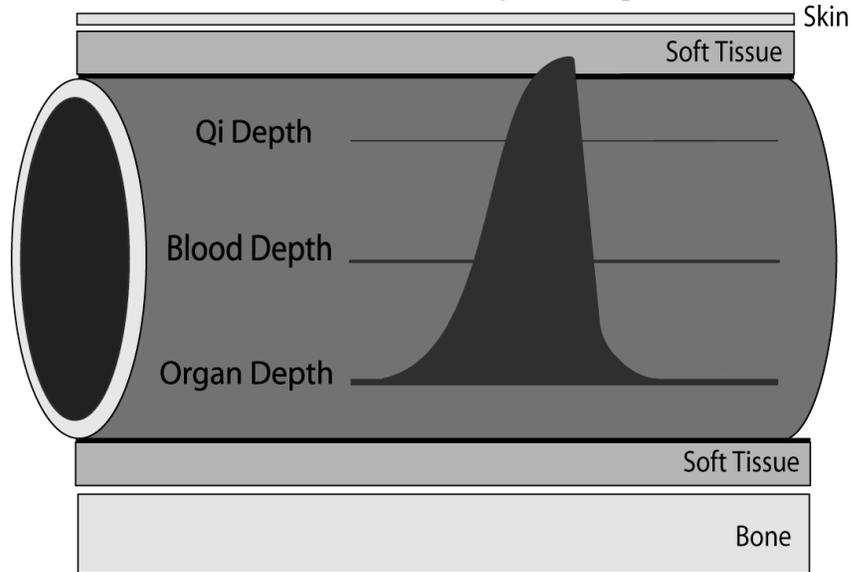


Flooding Deficient Wave

FLOODING EXCESS

Sensation: Felt as a strong sine wave originating at the Organ depth, surging over the Qi depth, but then drops off precipitously. It can be found on the entire pulse or in an individual position.

Interpretation: Heat from excess in the Yin organs when found on the entire pulse. When found in one position it indicates acute heat from excess in an organ. Infection, fire, characteristic of acute hepatitis, the Yang Ming stage of the Six Stages, mania in bipolar disease, acute fulminating infection. Occasionally it is found in chronic infections, especially at the left middle position with chronic hepatitis and mononucleosis. In which case there is less Robust Pounding and the spike above the Qi depth is less.



Flooding Excess Wave

HOLLOW FULL-OVERFLOWING

Sensation: Unlike the Flooding Excess quality, Full-Overflowing is a full sine wave, starting between the Organ and Blood depths, although it often feels as if it is coming from the Organ depth. It feels strong and forceful but separates under pressure accounting for the Hollow sensation.

Interpretation: Sign of chronic heat from excess (Tense) or deficiency (Tight) in the blood. Is dependent on other factors.

Tense - Hollow Full-Overflowing:

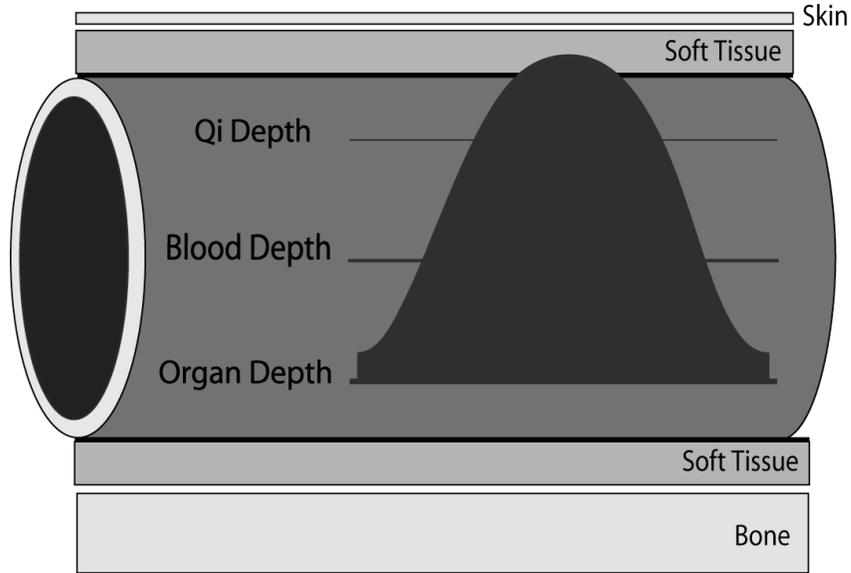
Blood heat, hypertension. Indicates heat from excess entering the blood (especially Liver fire as the Liver stores the blood). The heat damages and dilates the intima of the vessel walls giving the Hollow sensation. Can be due to Liver disharmony, Nervous System Tense, and overworking digestive system including rich food, alcohol, and spicy food.

Tight to Wiry Hollow Full-Overflowing:

In time, prolonged excess Heat in the blood results in Yin deficiency as the body supplies and depletes Yin to balance the heat. Prolonged heat damages the Yin of the vessel wall making the pulse harder. It feels less Hollow than Tense Hollow Full-Overflowing.

Yielding Hollow Full-Over Flowing:

Qi Wild condition, separation of Yin and Yang. It is due to sudden cessation of exercise.

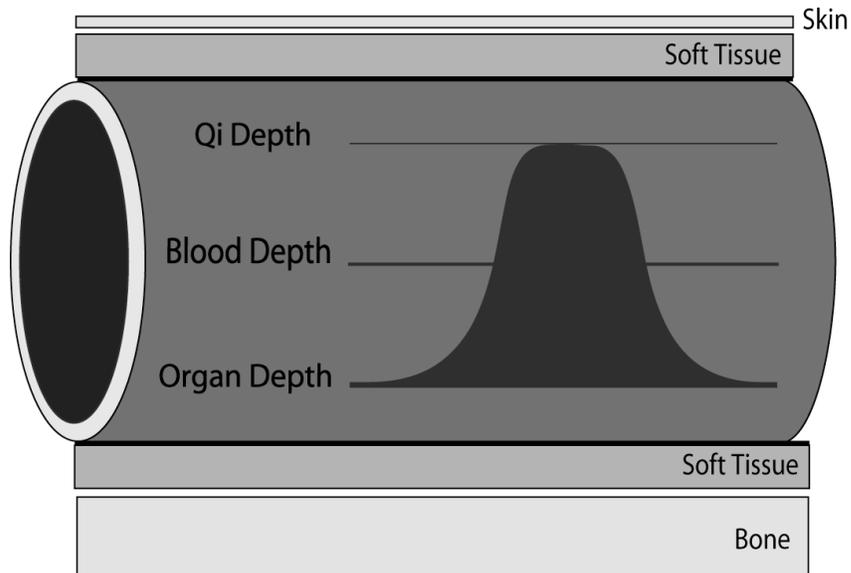


Hollow Full-Overflowing Wave

SUPPRESSED

Sensation: The sine wave of the Normal pulse is cut off or flattened at the apex.

Interpretation: Sign that synthetic materials foreign and toxic to human ecology impede the circulation of qi and blood. An indication of medications (less commonly suppressed feelings). The Robust Pounding quality at the Organ depth and markedly diminished at the blood and qi depths may also occur with the suppressed wave and medication.



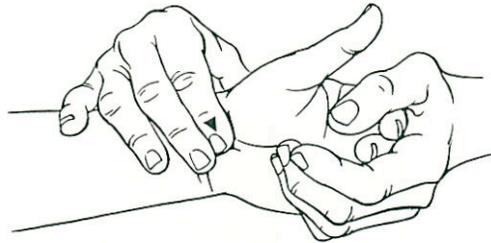
Suppressed Wave

PALPATING THE PRINCIPAL AND COMPLEMENTARY POSITIONS

The 6 principal positions are located on the radial artery. The complementary positions have two possibilities. Those with a location along the length of the artery and those found off the artery. For further information consult Chapter 4, Chinese Pulse Diagnosis, A Contemporary Approach.

LEFT AND RIGHT SPECIAL LUNG POSITION

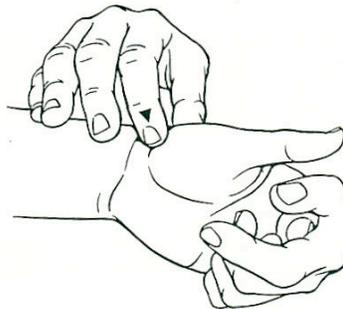
The left Special Lung position is found between the acupuncture points LU 9 and PC 7 using the flat pad of the right index finger. A light touch is employed to feel a small branch of the radial artery (Hammer, 71). The right is felt in a similar manner on the right wrist, using the left index finger. The left Special Lung position reveals status of the right lung, and the right Special Lung position the status of left lung. Tense, Tight, Wiry, Thin, Slippery, Vibration, Floating, Inflated, Muffled, Restricted, Change In Intensity, Absent and Choppy are qualities found here.



Left Special Lung position

NEURO-PSYCHOLOGICAL POSITION

Is found in, on or around a depression on the trapezium bone just distal to the distal principal positions. Dr. Shen used this position but never fully developed it in terms of interpretation. It is a position Dr. Hammer continues to research in terms of symptoms and associated qualities in order to corroborate its meaning for diagnosis. It relates to the head and brain. For instance, a Choppy quality in this position may be seen in a person with head trauma. Doughy, Change In Intensity, Tight, Slippery, Smooth and Rough, Robust Pounding and Muffled qualities have also been found here.



Left Neuro-psychological position

LEFT DISTAL POSITION

The left distal position is found by rolling the index finger distally under the scaphoid. The pressure must be light so as not to obliterate the pulse. These positions are accessed horizontally and care must be taken to delineate overflow of the left middle position from the true impulse. The sensation is felt at the most lateral aspect of the index finger distal interphalangeal joint. Common qualities are Tense, Tight, Thin, Flat, Inflated, Feeble-Absent, Vibration, Slippery, Muffled, and Change of Intensity.



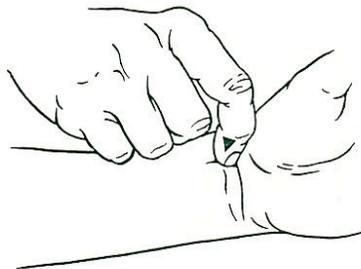
Left distal position

Pericardium Position

Rolling the index finger medially to laterally across the left distal position checking for a more prominent sensation in the middle of the principal position, a Tense or Tight indicating excess heat, or more rarely Slippery.

Large Vessel Position

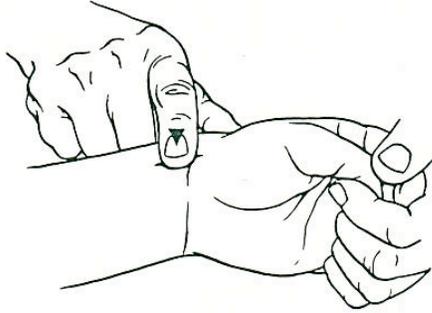
Roll index finger medially to the intersection of flexor carpi radialis and the scaphoid bone. There is a “hole” there which normally should be vacant. Occasionally an inflated (aneurysm or other Circulatory anomaly) or rarely Tense-Tight Full Over-Flowing quality (hypertension) is found in the very corner of this junction.



Large Vessel position

Mitral Valve Position

With very light touch this position is found laterally near the tendon (abductor pollicis brevis) as it passes over the styloid process to the scaphoid bone. Vibrations, Muffled and Slippery qualities are commonly found here.



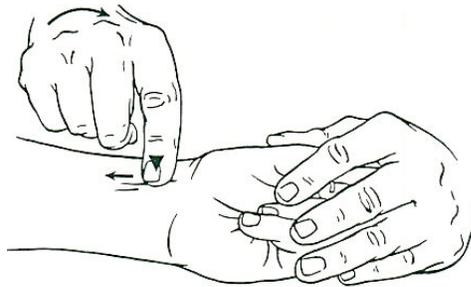
Mitral Valve position

LEFT DIAPHRAGM

The Diaphragm position is present on either both wrists. The index finger is rolled proximally from the distal position and middle finger rolled distally from the middle position. While rolling monitor the finger to feel as if it is going uphill or like a hill coming up under the finger. This is an Inflated quality. Mild inflation is considered normal. If it is more significant it is an indication of qi stagnation in the chest and diaphragm area. If it is felt to be coming primarily from the distal or middle position, it has an additional meaning depending on the location.

Heart Enlarged Position

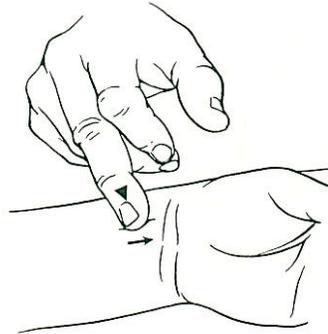
Located between the left distal and left middle positions. It is positive when the distal aspect of the diaphragm position is more Inflated and/or Rougher than the proximal aspect. It indicates a qi or possibly an actual Heart enlargement.



Heart Enlarged position

Distal Liver Engorgement

Located between the left distal and left middle positions. It is positive when the proximal aspect is Rougher and/or more Inflated than the distal aspect. The presence of any of the Liver Engorgement positions is a sign of Liver blood stagnation. It does not necessarily mean the physical liver is enlarged.



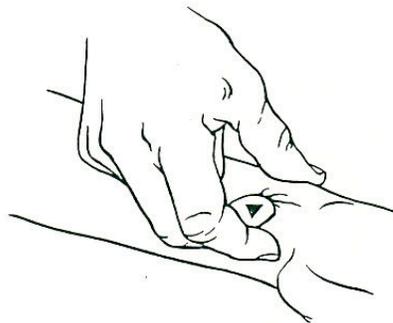
Distal Liver Engorgement

LEFT MIDDLE POSITION

Palpated with the right middle finger. Common qualities found here are Taut, Tense, Wiry, Thin, Pounding, Blood (-Unclear, -Heat, -Thick), Hollow Full-Overflowing, Slippery, Deep, Feeble, Empty, Hollow, Vibration, Diffuse, Reduced Substance and Pounding, Choppy, Muffled and Changes in Qualities and Intensities.

Ulnar Engorgement of the Liver

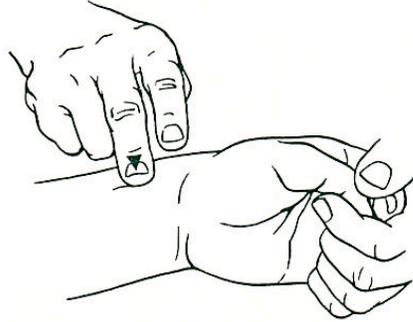
Roll the middle finger towards the ulnar feeling for a very superficial Inflation under the nail close to the flexor carpi radialis tendon. The sensation is quite superficial and can be very subtle.



Ulnar Liver Engorgement

Radial Engorgement of the Liver

Roll the right middle finger towards radius with very light pressure and feel for a sensation (usually Thin, Hard or Vibrating) on the flat part of the finger.



Radial Liver Engorgement

Gallbladder Position

Lay the middle finger proximally along the artery (may have to move slightly or very medially) and feel for a sensation at the distal interphalangeal joint. Common qualities include Tight, Tense, Wiry, Inflated, Slippery, Robust Pounding, Choppy, Muffled, Intensity Change.



Gall Bladder position

LEFT PROXIMAL POSITION

Felt with the right ring finger, one may have to roll medially to follow the course of the artery in accessing the main impulse. In this position, harder qualities suggest Kidney Yin deficiency and the more pliable ones Kidney qi and Yang deficiency. The Wiry quality can indicate Jing deficiency, early diabetes or pain in lower back or pelvis area. Common qualities include Taut, Tense, Tight, Wiry, Reduced Substance and Pounding, Deep, Feeble-Absent, Muffled, Choppy and Changes in Qualities and Intensity.

Large Intestine Position

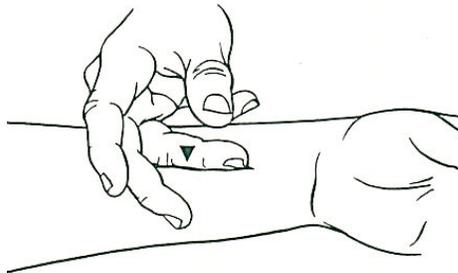
Roll the ring finger distally so that the ring finger is tilted at an angle of approximately 30 degrees. Feel for a sensation at the radial edge of the tip of the finger. Common qualities include Tense, Tight, Slippery, Biting, Rough Vibration, Choppy, Intensity Change and Muffled.



Large Intestine position

Pelvis Lower Body Position (left and right)

Roll as for the Gallbladder position and lay the right ring finger along the artery (possibly moving medially). Feel for a sensation at the distal interphalangeal joint. Choppy, Slippery, Tight, Tense, Muffled, Change in Intensity. The right Pelvis Lower Body is found in the same manner by rolling with the left ring finger proximal from the right proximal position.



Pelvis Lower Body position

RIGHT DISTAL POSITION

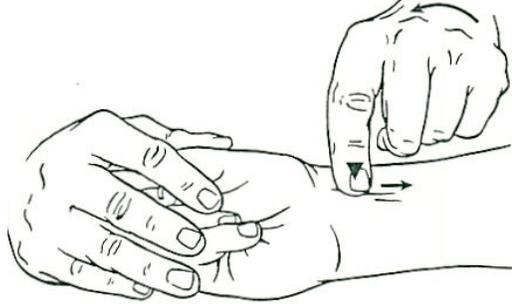
This position is accessed in the same manner as the left distal position. Common qualities found in this position are Tense, Inflated, Tight, Wiry, Slippery, Vibration, Floating, Feeble-Absent, Muffled, Change of Intensity and Qualities.

RIGHT DIAPHRAGM

The right Diaphragm position is assessed with the same method of rolling described for the left analogous position. When rolling proximal from the distal position and distal from the middle position, if the amount of Inflation is identical qi stagnation is present in the diaphragm area.

Pleura Position

Located between the right distal and right middle positions. It is positive when the distal aspect of the Diaphragm position is more Inflated and/or Rougher than the proximal aspect. It indicates qi stagnation between the chest musculature and lungs such as could be seen with pleurisy. This can be current or past depending upon symptoms.



Pleura position

Esophagus Position

Located between the right distal and the right middle positions. It is positive when the proximal aspect is more Inflated, Rougher or Tighter than the distal aspect. A Slippery quality indicates food stagnation while the Rough or Tight qualities indicate spasm, Qi stagnation or rebellious qi in the esophagus. These findings are to be taken seriously due to the rapid increase of conditions such as Barrettes Syndrome, and Esophageal Cancer. It is also noteworthy that these findings are generally present in even in those who are medicated for the treatment of GERD.



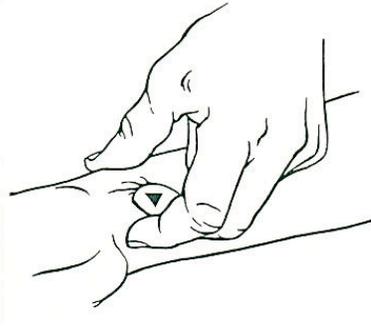
Esophagus position

RIGHT MIDDLE POSITION

This position is felt in the same way as the corresponding position on the left. Hard qualities (Tense, Tight, Robust Pounding) at this position relate to the Stomach and pliable qualities (Spreading, Deep, Reduced Substance and Pounding, Feeble-Absent, Empty and Muffled) to the Spleen. Both hard and pliable qualities can be felt concurrently representing the presence of both Stomach and Spleen pathology respectively.

Spleen Position

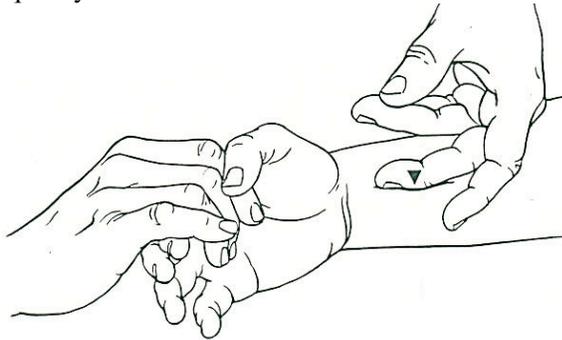
This, like the Ulnar Liver Engorgement, is an extra sensation located off the artery. The middle finger is rolled medially and superficially looking for a very superficial Inflation close to the tendon.



Spleen position

Stomach-Pylorus Extension Position

The Stomach-Pylorus Extension position is palpated along the distal interphalangeal joint of the left middle finger. The position is accessed by rolling from the middle position in the same way as the Gallbladder and is often quite medial. Tight, Choppy, Slippery, Inflated, Muffled and sometimes a Hollow quality are found here.



Stomach-Pylorus Extension position

Peritoneal Position

The Peritoneal position is said to be present when an Inflated quality is found on both the left and right wrists in the Ulnar Liver Engorgement and the Spleen position. According to Dr. Shen it is indicative of abdominal and perhaps pancreatic pathology.

RIGHT PROXIMAL POSITION

Accessed in the same manner as its analogous position on the left. Classical interpretation of this position represents Kidney Yang issues manifested by the pliable qualities (Reduced Substance, Feeble-Absent, Changing Qualities and Intensity). However, severe Yin deficiency may also show here with the harder qualities (Tight, Wiry) overriding the pliable. If pathology is present in the Bladder, the sensation in this position is overrun by excess qualities (Flooding-Excess, Robust Pounding).

Small Intestine Position

Found by rolling the ring finger distally in the same way the Large Intestine is felt. Usual qualities here are Tense, Tight, Slippery, Biting, Choppy, Changing Intensity and Muffled. If the same qualities are found at the Stomach-Pylorus Extension and the Small Intestine a Duodenum is said to be present and represents pathology in that part of the intestinal tract.

QUALITIES

Much of the confusion in reviewing and studying the pulse comes from variations in nomenclature. See Appendix 2 for examples of the terminology that have been commonly used by the leaders in the field. Some of the terms are vague and not very helpful in actually understanding the sensation. Others are a good description and are consistently used by everyone. The terminology used by Contemporary Chinese Pulse Diagnosis compares to that of Li Shi Zhen. It is also quite similar to that in use by Kaptchuk.

Pulse qualities are identified, named, and classified according to sensation. They are categorized by Volume, Depth, Width, Length and Shape. See Appendix 1.

VOLUME

Volume is a reflection of the metabolic force or the qi or Yang heat of the body and is evaluated by the amplitude and fullness of the wave. High amplitude reflects strong Yang force while low amplitude indicates it is diminished. See Fig 8.18 (Hammer, 228)

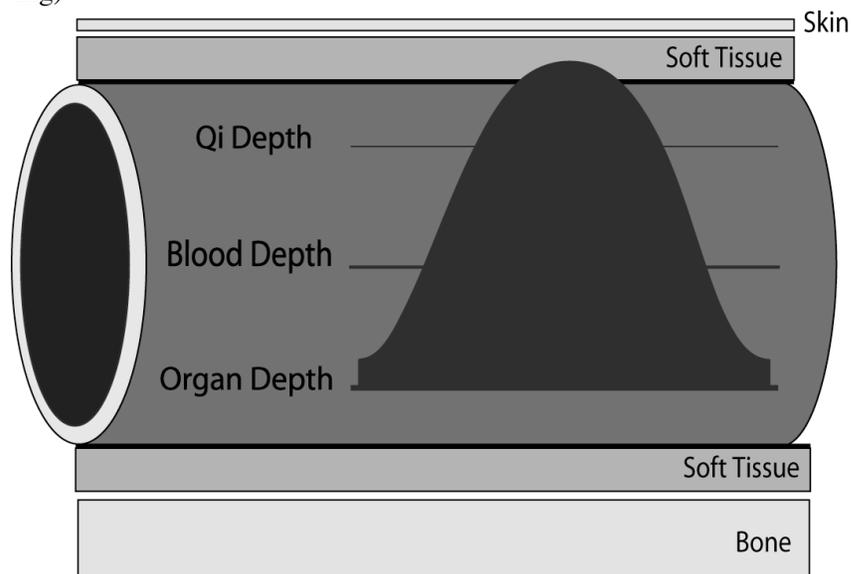
ROBUST QUALITIES

Robust qualities refer to conditions of excess, heat and stagnation. They include Hollow Full-Overflowing, Flooding Excess, Inflated, Robust Pounding.

Hollow Full-Overflowing

Sensation: Unlike the Flooding Excess quality, Full-Overflowing is a full sine wave, starting between the Organ and Blood depths, although it often feels as if it is coming from the Organ depth. It feels strong and forceful but separates under pressure accounting for the Hollow sensation.

Interpretation: Sign of chronic heat from excess (Tense) or deficiency (Tight) in the blood. Is dependent on other factors. (See the section on Wave Forms for a full discussion of Hollow Full-Overflowing)

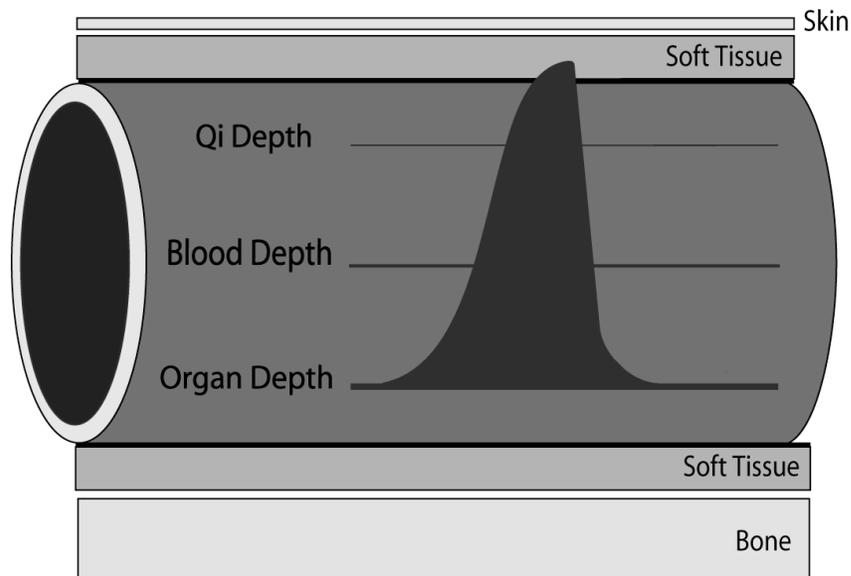


Hollow Full-Overflowing

Flooding Excess

Sensation: Strong sine wave originating at the Organ depth, surging over the Qi depth, then drops off precipitously. It can be found on the entire pulse or in an individual position.

Interpretation: Heat from excess in the Yin organs when found on the entire pulse. When found in one position it indicates acute heat from excess in an organ. It is a sign of infection, pathogenic fire, characteristic of acute hepatitis, the Yang Ming stage of the Six Stages, mania in bipolar disease, acute fulminating infection. Occasionally found in chronic infections, especially at the left middle position with chronic hepatitis and mononucleosis. In which case there is less Robust Pounding and the spike above the Qi depth is less.

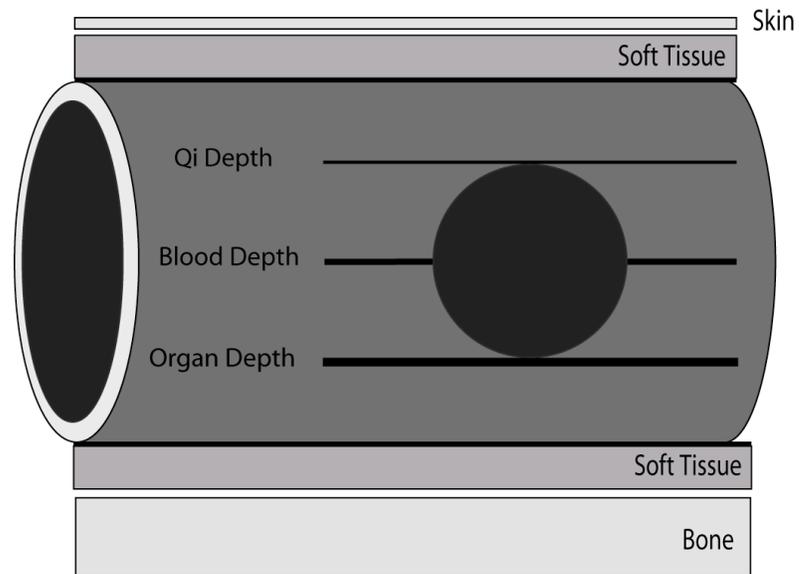


Flooding Excess

Inflated

Sensation: Like a balloon, the sensation follows the finger as it is lifted, with a constant level of tension within the three depths and equal at all of them.

Interpretation: Qi trapped in an Organ or area ('Heart Full'), can be due to physical or emotional trauma when the body condition or qi is robust. In Left distal Position often caused by breech birth.



Inflated

Robust Pounding

Sensation: Impulse strikes the finger with force, is hard hitting and throbbing.

Interpretation: Excess heat

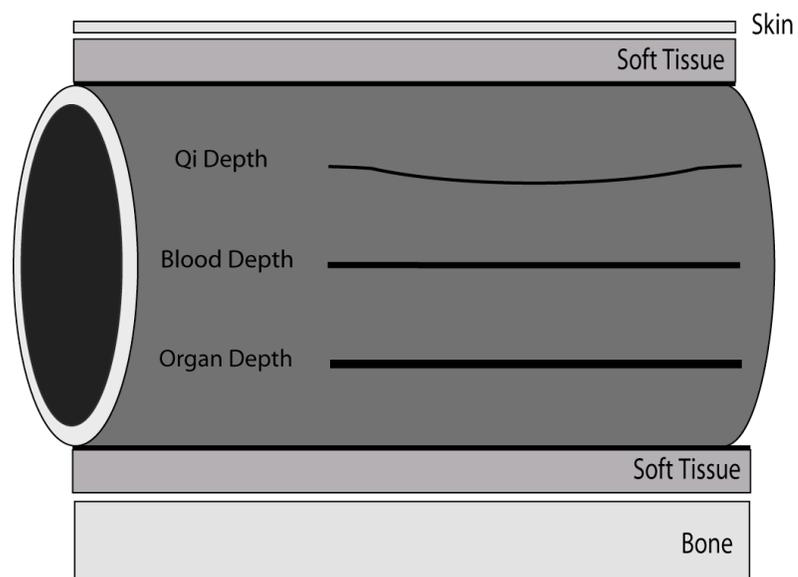
REDUCED QUALITIES

These qualities generally refer to conditions of deficiency of qi and Yang (and blood). They include Qi depth Yielding; Suppressed; Diminished and Absent Qi depth; Flooding Deficient; Flat; Diminished Blood depth; Blood depth Spreading; Reduced Pounding; Reduced Substance; Diffuse; Feeble or Absent; Deep; Flat; Muffled. See Fig 8.18 (Hammer, 228)

Qi depth Yielding

Sensation: The Qi depth is more pliable on gentle pressure.

Interpretation: Earliest sign of qi deficiency.

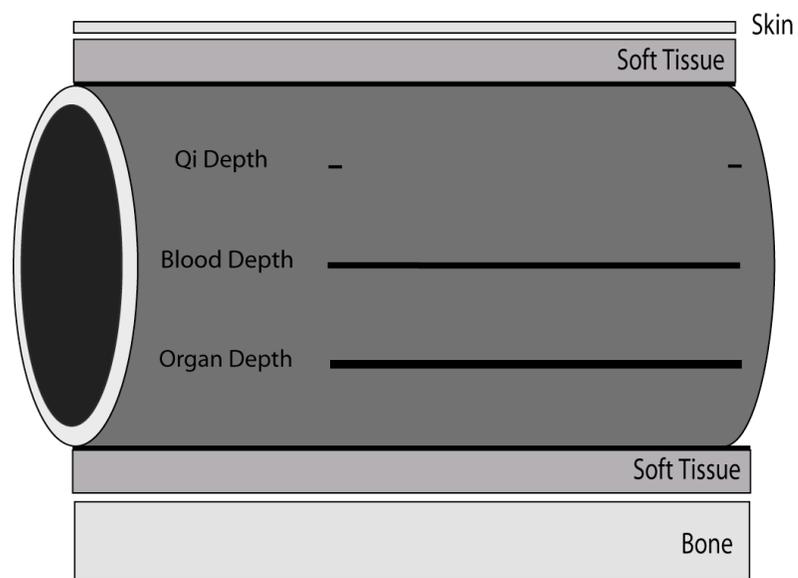


Qi Yielding

Qi depth Diminished and Qi depth Absent

Sensation: The Qi depth is either Feeble or not present.

Interpretation: Mild qi deficiency (2nd stage).

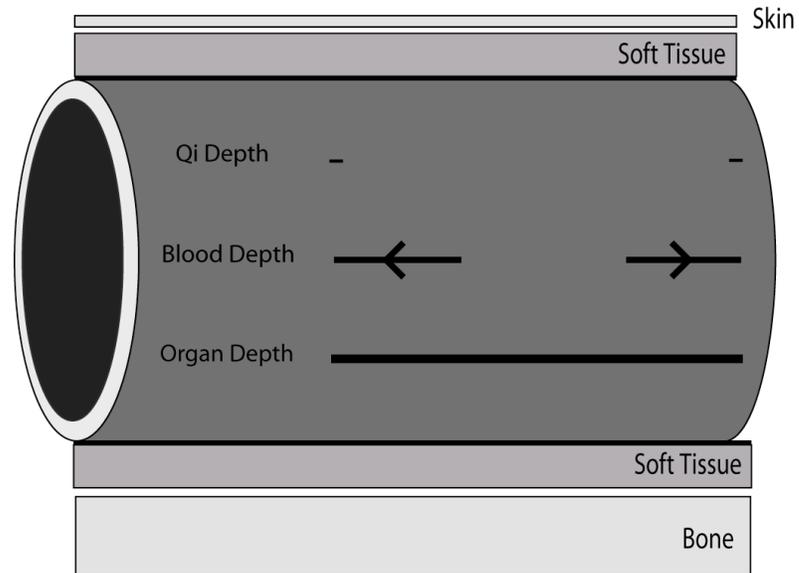


Qi Absent

Spreading

Sensation: Qi depth absent and Blood depth Separates to sides of fingers with pressure.

Interpretation: Progressing qi deficiency (3rd stage).

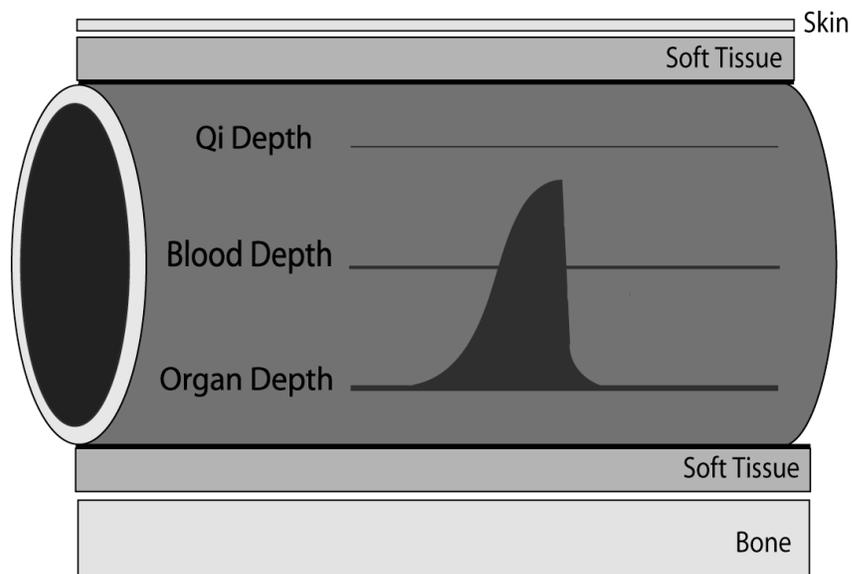


Spreading

Flooding Deficient

Sensation: The front part of the sine curve is normal, reaches or almost reaches the Qi depth and then falls or precipitously drops out from beneath fingers.

Interpretation: Sign of qi deficiency of the Yin organs. What Dr. Shen called a “Push Pulse”-- denotes physical overwork or work beyond one’s energy. Moderate qi deficiency (4th stage).



Flooding Deficient

Reduced Pounding

Sensation: Beats against finger without force, energy or vigor.

Interpretation: Moderate qi deficiency (5th stage), body depleted of qi and blood.

Reduced Substance

Sensation: Vessel wall lacks integrity. Pulse lacks substance, strength, elasticity, buoyancy and resilience when compared to the Normal pulse. Reduced Substance can be found over the entire pulse, at an individual position or at different depths. This is an example of a Wide qi deficiency pulse.

Interpretation: Advancing qi deficiency (6th stage).

Diffuse

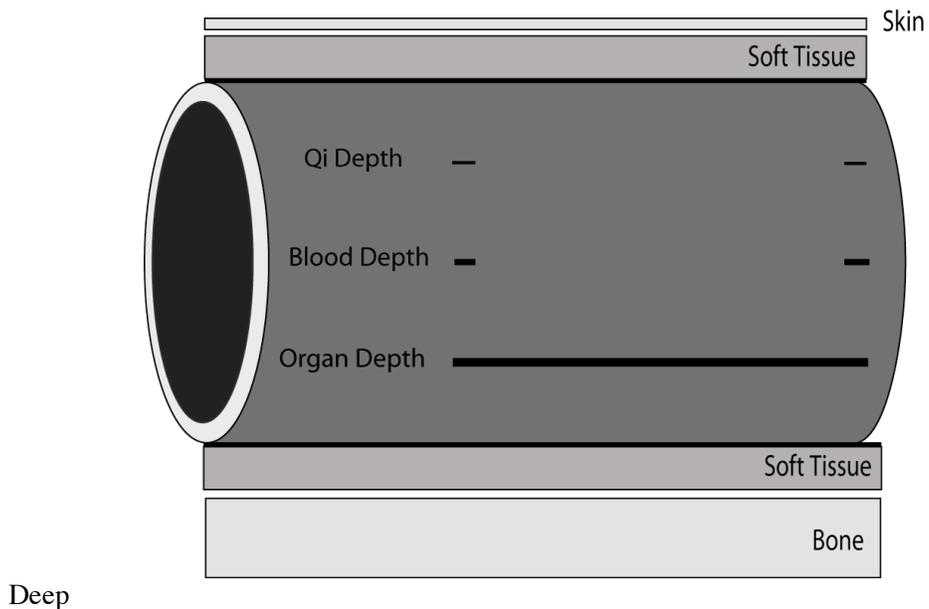
Sensation: Boundary of vessel partially or completely obliterated, sometimes found with other qualities such as Reduced Substance or less often, Tense, Tight or Thin felt in the middle. This is another example of a Wide qi deficiency quality.

Interpretation: Advancing qi deficiency (7th stage) with blood deficiency.

Deep

Sensation: Qi and Blood depths Absent.

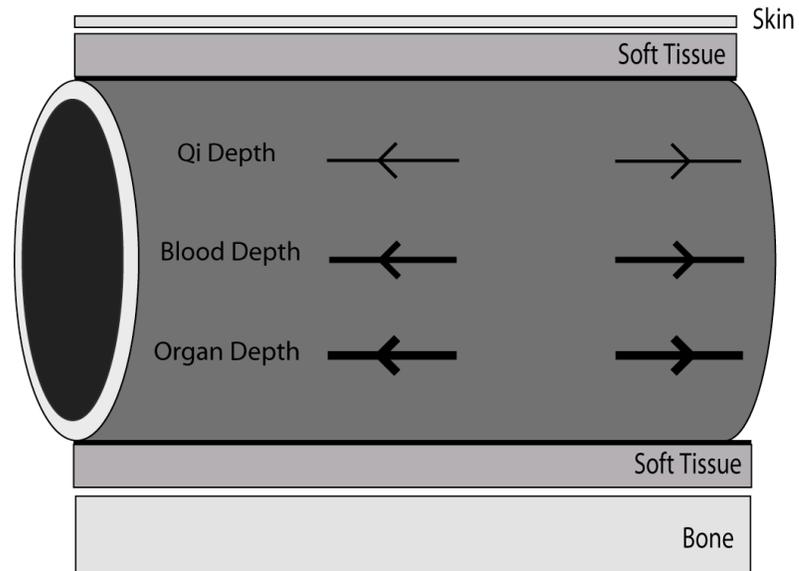
Interpretation: Advanced qi or Yang deficiency (8th stage). In the proximal positions this quality suggests a propensity to life-long (endogenous) depression.



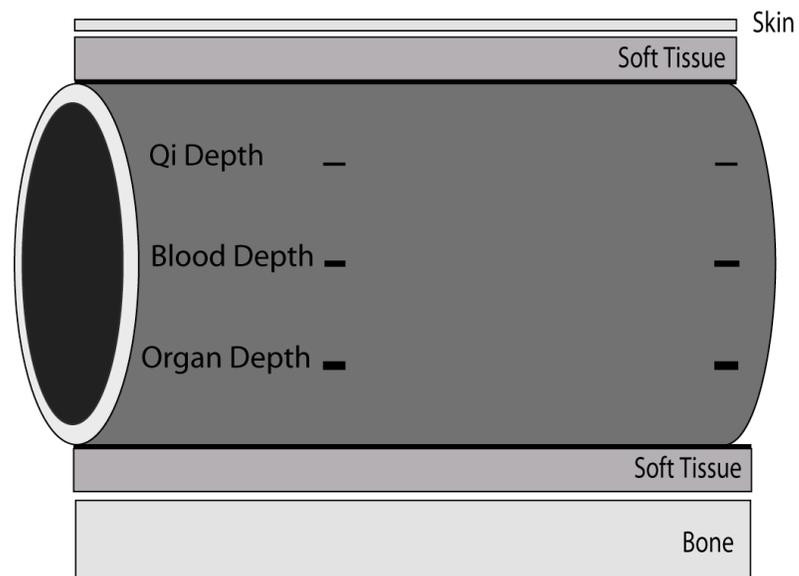
Feeble-Absent

Sensation: All depths Separating or Absent

Interpretation: Severe qi deficiency (9th stage). True qi deficiency with blood and Yin of organ compromised. Shows vulnerability to illness. In the proximal positions this quality suggests a propensity to life-long (endogenous) depression.



Feeble

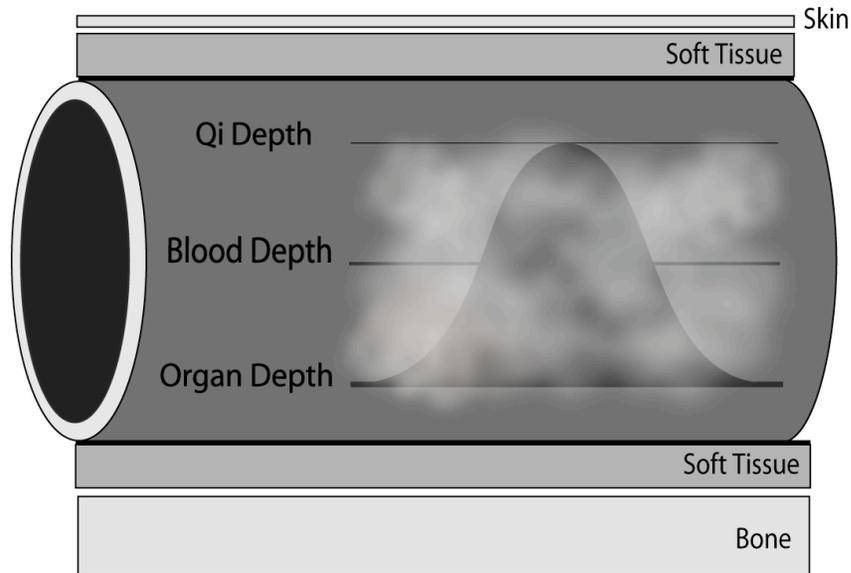


Absent

Muffled

Sensation: Feels obscured as if being felt through layers of cloth. Is muted and unclear.

Interpretation: Stagnation of all substances, neo-plastic activity, breakdown of cellular function. Low degree of Muffled on the whole pulse is a sign of possible depression. At the left distal position it is indicative of heart depression and lack of joy. In the Pelvis/Lower Body position it shows severe qi and blood stagnation, uterine and ovarian tumors. Also seen following surgery.

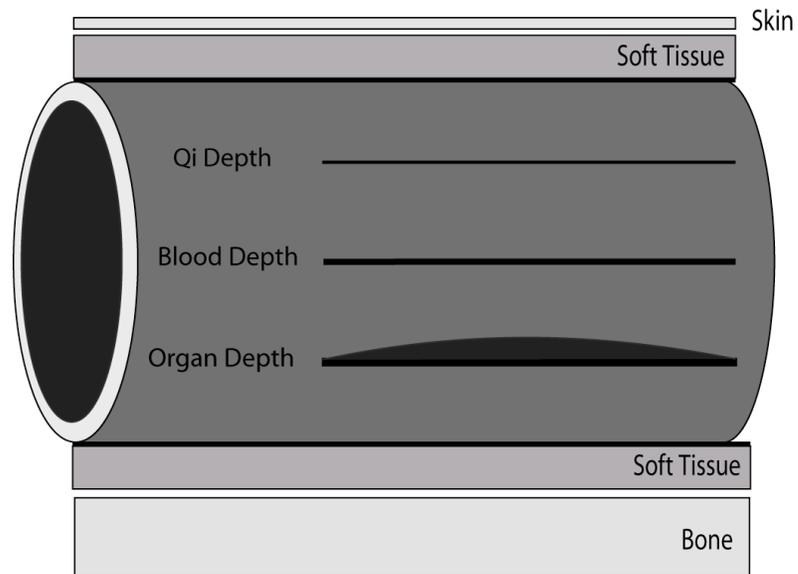


Muffled

Flat

Sensation: Found in a single position at Organ depth, no qi or blood depth and stifled and squashed, with a very small or even no wave.

Interpretation: Energetic situation in which qi cannot penetrate the organ. Person usually is weak at the time of event. The Flat quality is found most commonly in upper burner, especially the left distal position, where it suggests emotional trauma early in life, birth trauma (as in cord around the neck), or physical trauma at a time when the body condition is weak. The Heart is Closed (Heart Qi Stagnation).

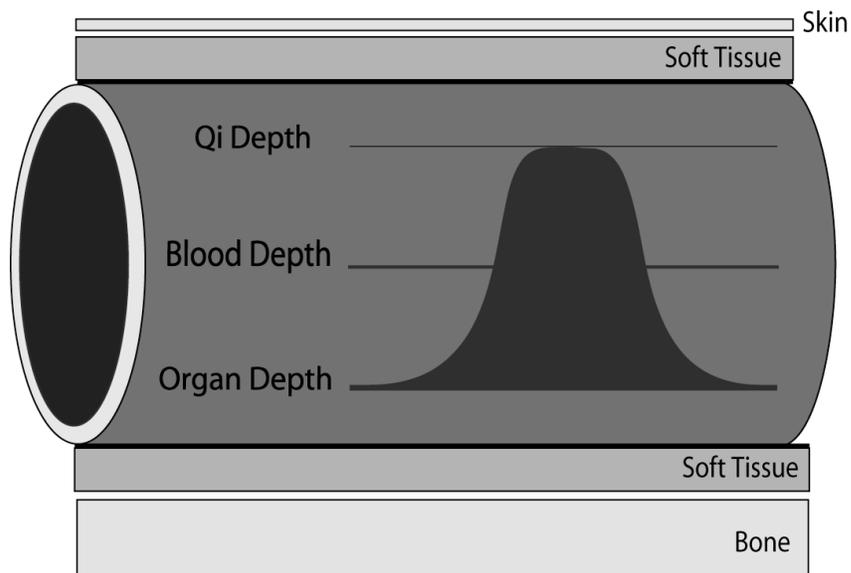


Flat Wave

Suppressed

Sensation: The sine wave of the Normal pulse is cut off at the apex.

Interpretation: Sign that synthetic materials foreign and toxic to human ecology impede the circulation of qi and blood. An indication of medications (less commonly suppressed feelings). The Robust Pounding quality at the Organ depth and markedly diminished at the blood and qi depths may also occur with the suppressed wave and medication.



Suppressed Wave

DEPTH

Depth gives us information regarding the location and stage of the disease. Generally, the superficial pulses are associated with acute diseases involving the wei qi and deeper pulses a sign of more profound chronic illness of the Yin organs (the deeper the pulse, the more serious the disease).

There are, however, exceptions to this rule. For example, the Empty quality is found at the Qi depth but is indicative of severe dysfunction and the separation of Yin and Yang.

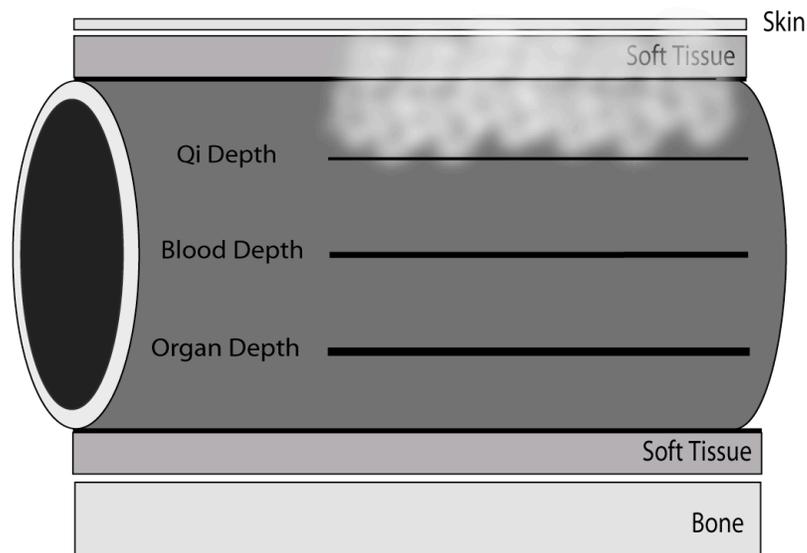
SUPERFICIAL

These qualities are located at or above the Qi depth, or at the surface. They include Floating; Cotton; Empty; Leather; Minute; Scattered; Hollow.

Cotton

Sensation: Spongy, amorphous resistance above the Qi depth, with greater resistance as one approaches the Qi depth, or at whatever depth the pulse is first accessed.

Interpretation: Associated with a sense of being trapped in a situation, powerless to change it. Wei qi is stagnant. Occasionally due to physical trauma.



Cotton

Floating

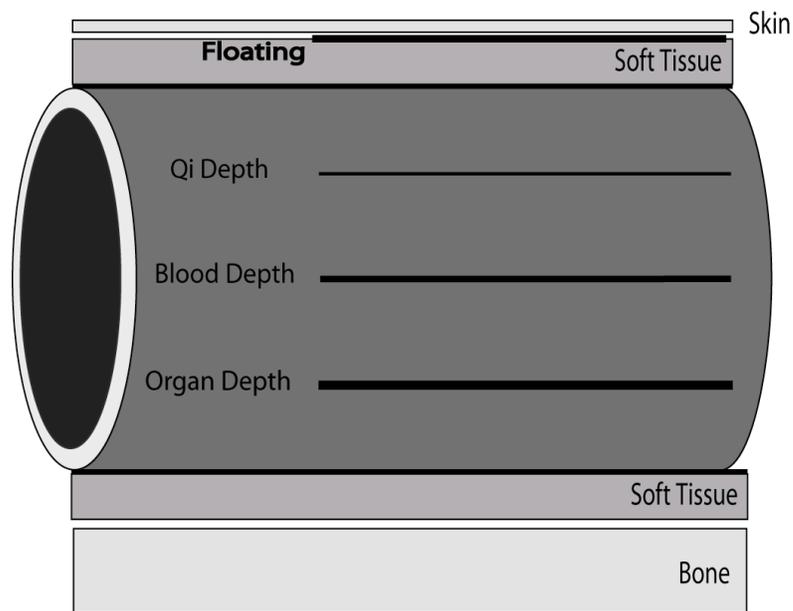
Sensation: Accessed very superficially, without a wave.

Interpretation: Is dependent on other qualities.

Floating, Tense, Slow indicates wind-cold.

Floating Yielding, Rapid indicates wind-heat.

Floating Tight indicates Liver wind.



Floating

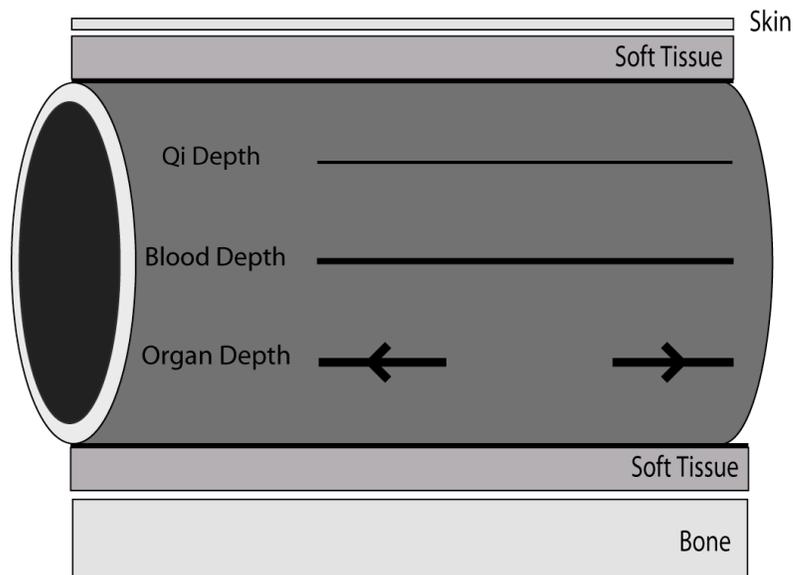
Empty

Sensation: clearly palpable at the Qi depth, Separating or Absent at Blood or Organ depths.

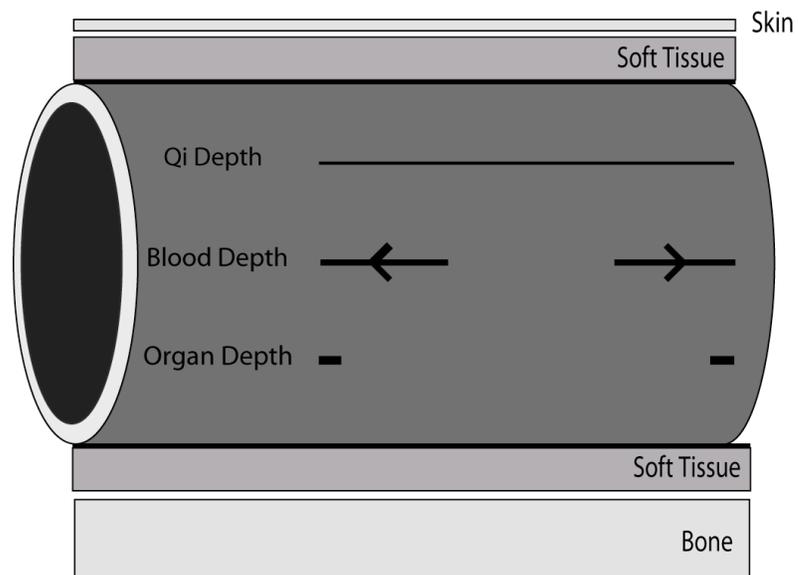
Interpretation:

Individual Position: Separation of Yin and Yang in that organ.

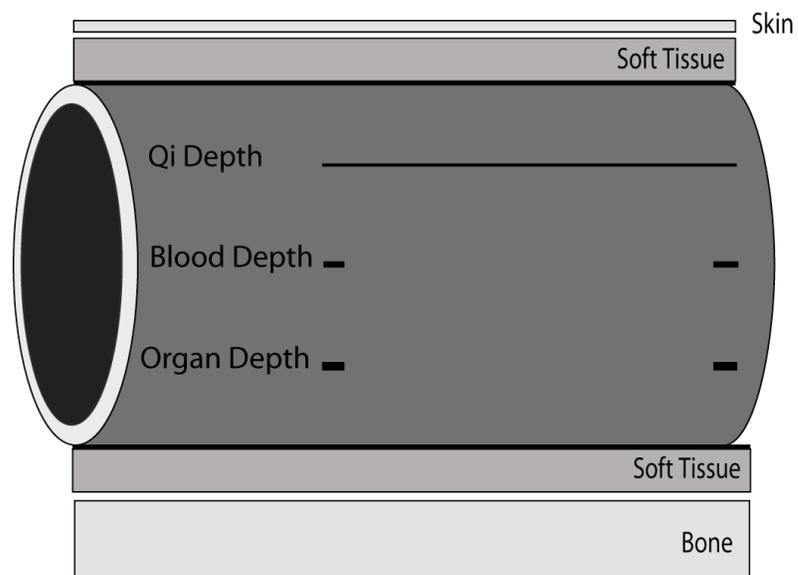
On whole pulse: 'Qi Wild', danger, imminent major illness. Dr. Shen said the illness would occur within 6 months. In Dr. Hammer's experience 3 months to 3 years is a more reliable range. If the Empty quality is not found consistently, lasting only a few days or weeks, it is associated with an acute emotional shock and distress, where the qi comes to the surface as a defensive strategy.



Early Stage Empty



Middle Stage Empty



Empty

Hollow

Sensation: Blood depth spreading or absent.

The interpretation is based on other findings, such as:

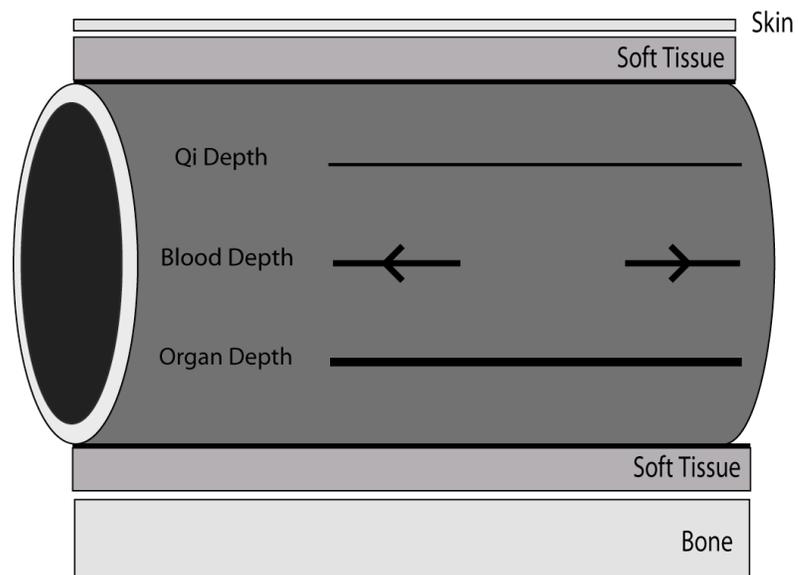
Tense Hollow Full-Overflowing: Blood Heat, Hypertension.

Yielding Hollow Full-Overflowing: sudden cessation of exercise.

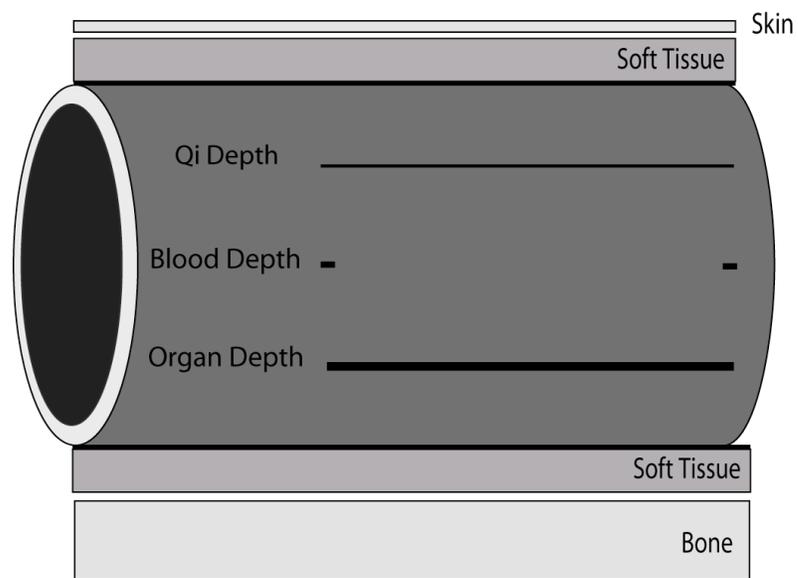
Yielding Partially Hollow: mild blood deficiency.

Leather-like Hollow & Rapid: Impending severe hemorrhage.

Leather-like Hollow & Slow: Recent severe hemorrhage.



Early Hollow



Hollow

Ropy-Yielding Hollow

Sensation: Cord-like, big, round, but soft like a pliable and flexible tube.

Interpretation: Exertion beyond energy for a long time (especially over-exercise) and the resulting drying of the intima of the blood vessels.

SUBMERGED

Submerged qualities are found in the deep regions of the pulse and include Deep, Firm and Hidden.

WIDTH

Width primarily reflects the condition of the blood in terms of excess, toxicity, heat, viscosity, plasticity, and deficiency, and the qi in terms of mild deficiency. Generally wide pulses are associated with excess heat and more acute patterns, and narrow pulses with deficiency and more chronic patterns.

WIDE

Wide qualities are divided into:

Wide Blood

1. Excess (Blood Unclear, Blood Heat, Blood Thick and Hollow Full-Overflowing)
2. Deficient (Yielding Partially Hollow, Hollow Leather-Like)

Wide Qi

1. Excess (Robust Pounding, Flooding Excess)
2. Deficient (Yielding at Qi depth, Diffuse)

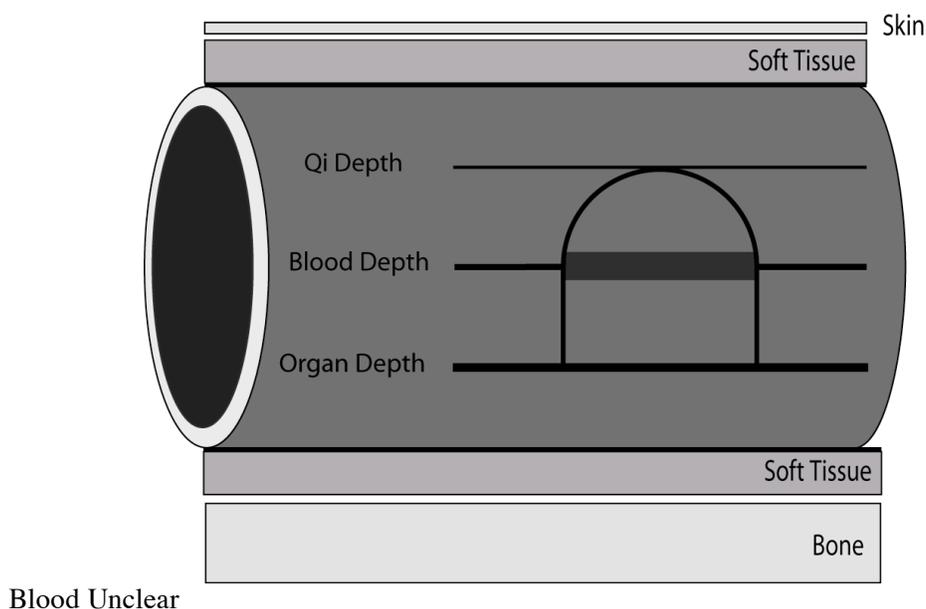
Wide Blood Qualities - Blood Unclear, Blood Heat, Blood Thick

These qualities are felt by slowly releasing pressure from the Organ depth through the Qi depth. Under normal circumstances, the substance of the pulse should decrease as one lifts the fingers from Organ to Blood depth and Blood to Qi depth. The Blood Unclear, Blood Heat, and Blood Thick qualities are defined by an increase in substance as the pressure is released. Refer to the Normal wave (page 17) for comparison.

Blood Unclear:

Sensation: Barely perceptible increase in size, rather than a decrease, at the Blood depth as the finger is raised from the Organ depth. As pressure is released from the Blood to the Qi depth, the size diminishes. Often the pulse is also Slippery.

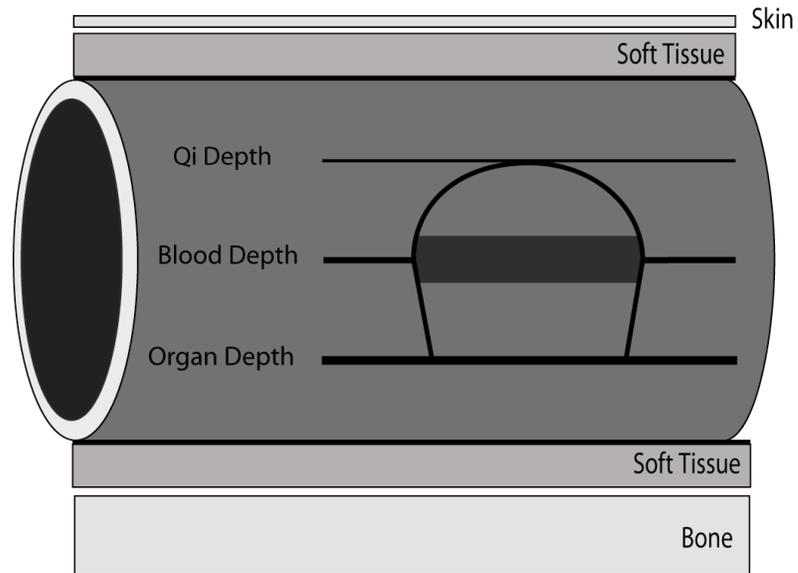
Interpretation: Toxicity in blood due to environmental toxins, inadequate metabolism of toxins in the Liver, deficient digestion.



Blood Heat:

Sensation: As one raises one’s fingers from the Organ depth the pulse expands in the Blood depth even more than in Blood Unclear. The pulse diminishes as one continues to release pressure to the Qi depth.

Interpretation: Blood Heat from Liver qi stagnation, deficient heat from an over working Nervous System, excessive spicy foods, sugar, alcohol, emotional conflict.

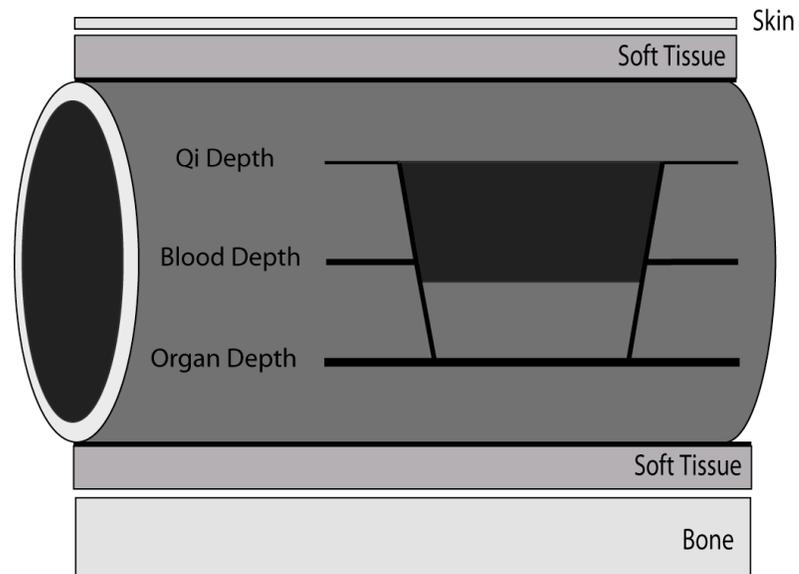


Blood Heat

Blood Thick:

Sensation: The pulse expands in the Blood depth and continues to expand as one releases pressure from the Blood depth to the Qi depth.

Interpretation: Profound Blood Heat, often found with Slippery at the Blood depth. Can be due to excessive fatty and rich foods - Liver heat with damp from the Spleen and Gall Bladder. Also from ‘Nervous System Tense’.



Blood Thick

NARROW

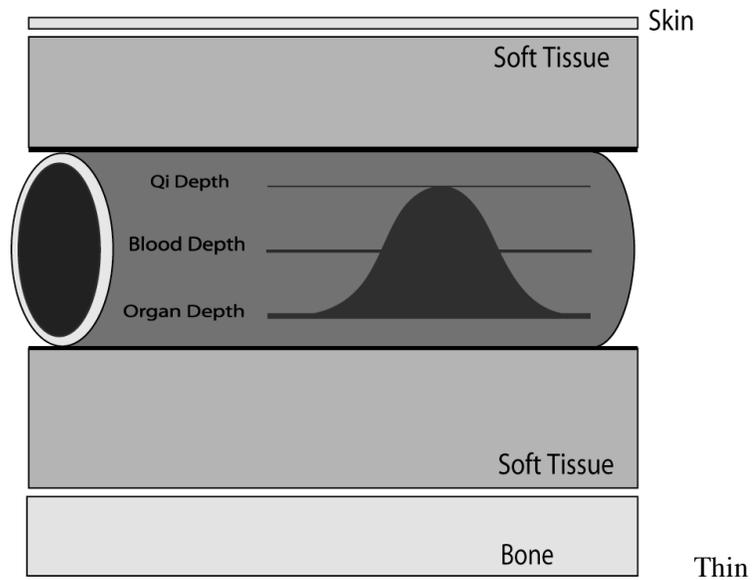
Narrow pulses are indicative of deficient conditions of the blood and Yin (and Yang). They include Thin, Tight and Wiry, and Empty Thread-Like qualities. See fig. 10-4 (Hammer, 304) Tight and Wiry are can be described in terms of shape and are categorized as non-fluid even qualities. They are described at length in the Shape section of this handbook, page 47. Similarly, Empty is described in full in the Depth section, page 39.

Narrow Blood Qualities

Thin

Sensation: Thinner than the Normal pulse. Distinguished from the Taut-Tense-Tight-Wiry pulses by assessing hardness. The Thin pulse is not harder than the Normal pulse. The Taut-Tense-Tight-Wiry pulses are harder than the Normal pulse. The Thin pulse, in conjunction with a harder Tight quality, suggests blood and Yin deficiency. The Thin-Yielding pulse suggests blood and qi deficiency.

Interpretation: Blood Deficiency. The Thin pulse is more common in women due to the demands of menstruation and childbirth. If the Thin pulse is found in a young man it is a serious sign associated with chronic disease.



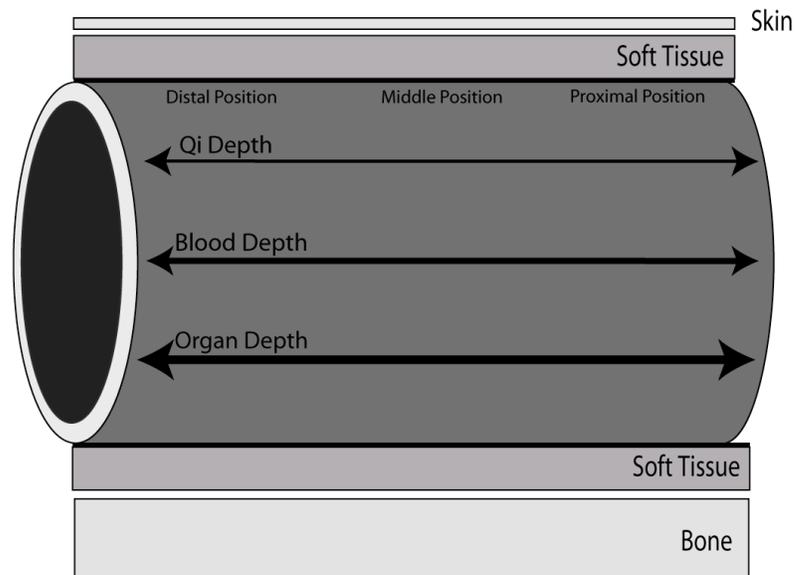
LENGTH

EXTENDED

Long

Sensation: Continuous between the 3 principal positions and feels like an extended stroke.

Interpretation: Usually a sign of strong qi and extended life. Pathological heat if with other factors such as extreme Robust Pounding and Very Tense.



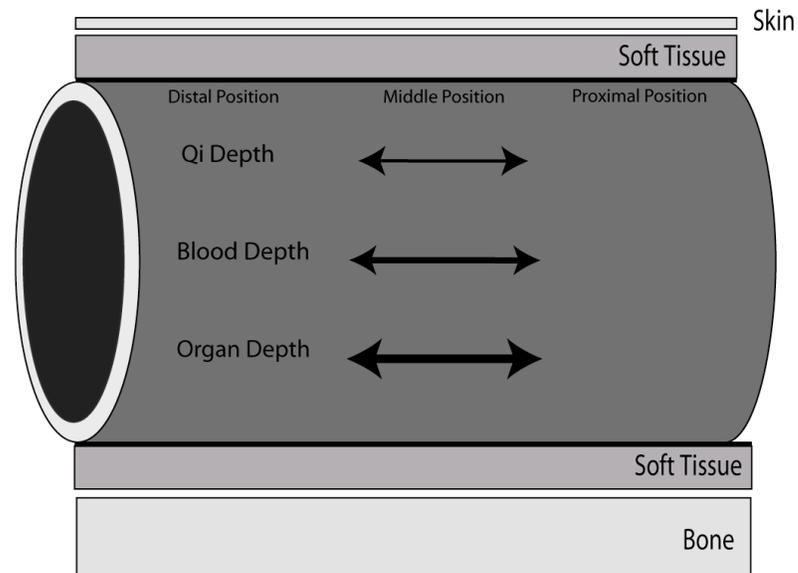
Long

DIMINISHED

Short

Sensation: Only palpable at the middle position.

Interpretation: Severe stagnation of substances in the Middle Burner or severe deficiency of qi in the Upper and Lower Burners.



Short

Restricted (length)

Sensation: Very short, found in the Special Lung Pulse

Interpretation: Severe stagnation and deficiency, Pulmonary Obstructive Disease, cancer of the lung chest and breast.

SHAPE

Classification according to shape reflects specific excess or deficiency. It is divided into those sensations that lack fluidity and are hard (even or uneven) and those which are more pliable or fluid.

FLUID QUALITIES

Slippery

Sensation: rapidly sliding in one direction, independent of finger pressure.

Interpretation: Damp excess, pregnancy, elevated blood lipids and glucose, septicemia, systemic infection, Phlegm Misting the Orifices of the Heart, Heart qi deficiency associated with turbulence in the Circulation and with hypertension together with the Tight Hollow Full-Overflowing and Rapid qualities.

NON - FLUID QUALITIES

Even Hard

These qualities represent processes that involve qi stagnation, heat (excess and deficient) and Yin deficiency.

Taut-Tense-Tight-Wiry

Sensation: These are classified as Hard qualities, exhibiting a greater degree of tension than the normal pulse with a decrease in diameter characterized by increasing hardness and tension. The Taut-Tense-Tight-Wiry pulses are on a continuum; the Wiry pulse is the hardest and the least in diameter.

Interpretation:

Taut: Qi stagnation

Tense: Qi stagnation and excess heat

Tight: Yin deficiency, pain, or cold. In the complementary positions it suggests inflammation and irritation.

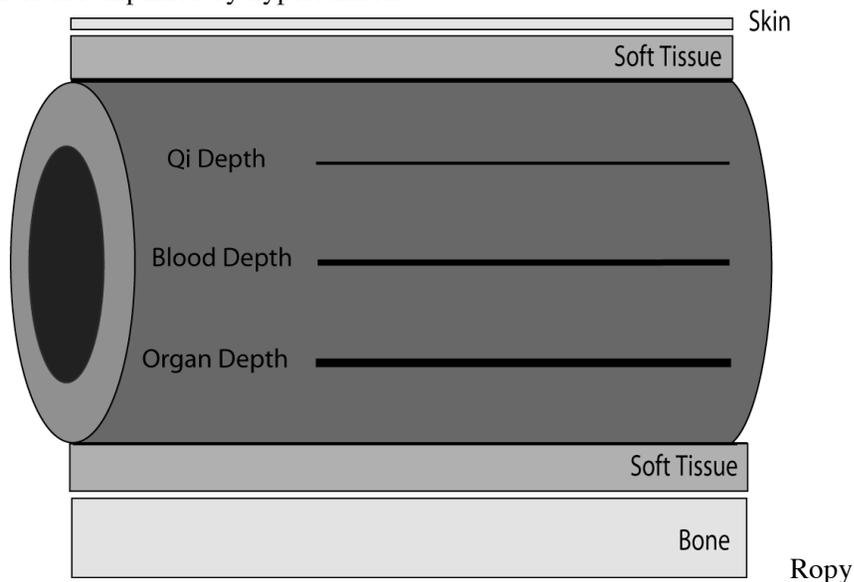
Wiry: Yin-Essence deficiency or severe pain, nervous tension and Liver wind, cerebrovascular accident (with increased blood pressure and Wiry over the entire pulse), pain and cold (not common). The Wiry quality is also associated with incipient diabetes, especially in the proximal positions, and both the left proximal and left middle positions.

Fig. 11.2 (Hammer, 328)

Ropy

Sensation: Like a cord, with the edges clearly delineated. Feels as though one could lift the pulse away from the surrounding tissues. It is usually found on the whole pulse, and rarely only in the left middle position.

Interpretation: Hardening of the vessel walls due to heat vulcanizing fluids or lack of fluid (Yin deficiency) nourishing the intima. It is associated with developing arteriosclerosis, sometimes preceded or accompanied by hypertension.



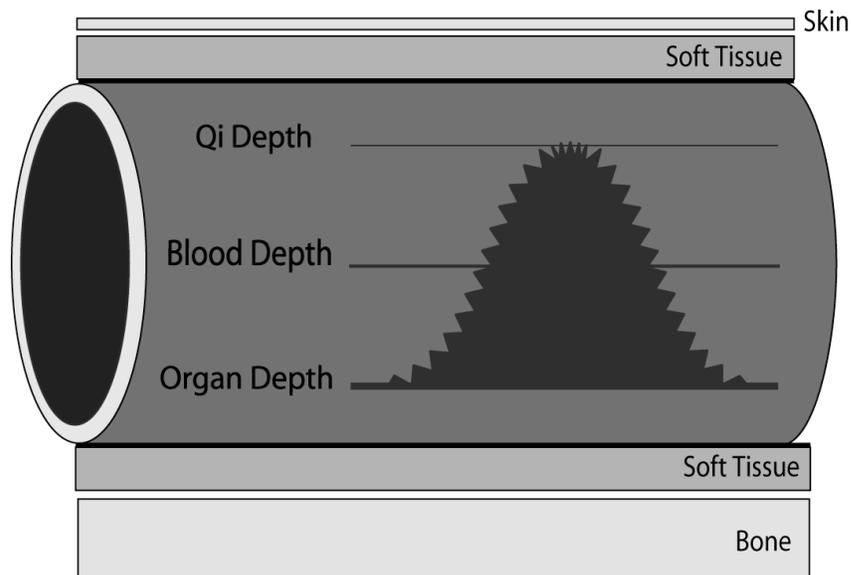
Uneven Hard

These qualities have a coarse or a serrated sensation and can be found in individual positions or on the entire pulse.

Choppy

Sensation: uneven and grating- there is some similarity to Rough Vibration but “even the roughest Vibration has a more delicate quality than the coarse Choppy quality” (Hammer, 363).

Interpretation: Blood stagnation and toxicity. Choppy suggests blood stagnation in tissues; we differentiate between blood stagnation in the vessels and in the tissues. Recently we have found that the Choppy quality is associated with toxicity and that many toxins cause blood stagnation. Toxicity seems to be an escalating problem among our patient population, young and old.



Choppy

Smooth and Rough Vibration

Sensation: buzzing, shaking, trembling, tingling, shivering, wavering, vacillation, oscillation and reverberation. There are two types of Vibration:

Smooth, which is less abrasive and higher frequency.

Rough, which is more coarse and lower frequency.

Interpretation: Smooth Vibration at the Qi depth is current, transient worry. Smooth Vibration found at all depths indicates that a person is a worrier, and will find something to worry about regardless of circumstances.

Rough Vibration on the entire pulse, usually at all depths, is associated with shock, and also with fear and guilt. In a single position, Rough Vibration is associated with parenchymal damage.

MISCELLANEOUS SHAPE QUALITIES

Doughy

Sensation: Feels like an amorphous glob of clay. The shape is never the same and the volume varies from very faint to moderately robust. Found in the Neuro-psychological position.

Interpretation: Chronic Kidney Yang Essence deficiency. Dr Hammer relates this to the myelin sheath of the central nervous system where the most rapid electrical impulses occur. Doughy can be a sign of disease of the central nervous system but also can represent a mild degrees of brain damage of a sub clinical nature that is probably present in many if not all people.

Nonhomogeneous

Sensation: Not accessed uniformly within the domain of a particular position. In some parts of the position there is consistently more substance to the pulse than in other parts.

Interpretation: Separation of Yin and Yang with seriously impaired function of the associated organ. If the position is Robust it is a sign of stagnation of all substances. If the position is Reduced it is a sign of deficiency of all substances.

Bean (Spinning)

Sensation: Very Tight to Wiry with a sense of urgency and often like a hard object sticking out from and counter to the longitudinal flow of the rest of the pulse. May occur partially between and partially on a position rather than entirely on a position.

Interpretation: Associated with profound emergent and traumatic events involving a great disturbance to physiology.

Collapse

Sensation: A tendency for the pulse to completely collapse suddenly under the fingers – all qualities disappear. Usually found on the whole pulse or on a side. This is a form of the Absent quality where the qualities tend to remain away rather than coming and going.

Interpretation: Separation of Yin and Yang. A 'Qi Wild' condition.

Amorphous

Sensation: Impulse has no form and is like putting the fingers into a cloud. Usually found in relation to San Yin Ma and Fan Quan Ma.

Interpretation: This sensation is associated with the San Yin Ma and Fan Quan Ma as the blood is shunted through the anomalous artery.

QUALIFYING TERMS

These qualities are used to describe the more enduring and profound qualities that can be found on a pulse.

Separating

Sensation: On pressure the pulse moves in two directions, distally and proximally, at the same time. There is no sensation directly under the flat pas of the finger.

Interpretation: Helps define Empty, Hollow and Spreading qualities. It is associated with the early stages in the development of these qualities.

Biting

Sensation: A nipping sensation under the finger.

Interpretation: Is a form of the Tight and Wiry qualities and is a sign of discomfort and pain usually in the abdominal area.

Vague (Subtle)

Sensation: Subtle means that the pulse it qualifies requires a finer palpatory distinction to access and is more elusive.

Interpretation: Associated with less pathology than a quality that is not subtle.

Transient (Ephemeral)

Sensation: Quality is fleeting and transitory.

Interpretation: Modifies the meaning of the quality to a less disharmonious condition than if the quality was more enduring.

Rough

Sensation: Feels grating and uneven, not smooth.

Interpretation: Enhances the description of other qualities such as Vibrations. The Rougher the sensation the more serious the implication of the quality it describes.

ANOMALOUS QUALITIES

These qualities refer to structural changes of the radial artery or soft tissues at the wrist and include the following.

San Yin Ma

The entire pulse on the left side is Hidden. It is thought to be a congenital abnormality and the qualities which can be discerned are of no clinical significance.

Fan Quan Ma

Congenitally anomalous artery on the dorsal side of the forearm that renders the pulse unavailable to diagnostic processes. It can occur on one or both sides.

Ganglion

A small synovial cyst that can form at any time over the radial artery. Again it renders the pulse useless as a diagnostic tool.

Local Trauma

Arteries can be damaged by intra-arterial tubes for the delivery of blood also by surgery.

Split Quality

Split vessels are rare and mostly found at the middle positions. Dr Hammer believes they are associated with any experience that arouses profound fear of the unknown. These include prospective death as with malignancy, many or significant losses among friends and family, and most importantly, contemplation of suicide.

COMMONLY CONFUSED QUALITIES

CHANGING INTENSITY AND CHANGING TO ABSENT

When a pulse changes to Absent, the change is abrupt. In an instant the sensation completely disappears from underneath the pad of the finger. When Changing Intensity occurs the change is gradual, over a number of beats.

SLIPPERY AND SEPARATING

In a Separating pulse the impulse hits the finger at both sides but is not palpable under the flat pad of the finger. It nearly feels as though the wave hits twice. This can be easy to confuse with the sliding under the finger of the Slippery quality. The Separating pulse has a gap and moves in two directions. The Slippery quality is continuous and slides by.

CHOPPY, ROUGH VIBRATION AND SLIPPERY

Inherent in the Slippery quality is turbulence to the flow of the blood in the vessel. Sometimes this turbulence may have a coarse sensation with the movement of the wave across the finger. The Choppy and Rough Vibration qualities have a definite unevenness to the wave. Choppy feels more serrated and jagged. With the Rough Vibration the serration is much finer. Slippery has a smoother sensation to the finger.

ROBUST POUNDING AND SLIPPERY

The wide and forceful nature of the Robust Pounding quality can add an expansive character to the sensation. It can appear to hit the flat pad and both sides of the finger simultaneously causing the impulse to seem to move in both directions. This can be difficult to differentiate from the Slippery quality. In the case of Slippery, the impulse may strike the side of the finger (the side that meets the flow of blood in the vessel) and then appear to slide under the flat pad as it passes. It will not hit the finger on the other side.

YIELDING HOLLOW FULL-OVERFLOWING

The concept of finding Yielding and Hollow qualities in a Full-Overflowing wave (indicative of excess heat in the blood) may seem contradictory. All however can be present concurrently. Attention must be given to the apex of the wave as it rises above the Qi depth. With very light pressure the summit of the wave can be felt to yield under the finger. As more pressure is gently applied there is a point where the sensation diminishes or disappears from under the pad of the finger. Then continuing down toward the Organ depth the sensation is once again palpable under the finger pad.

ABSENT AND EMPTY

The confusion between these qualities arises more due to nomenclature and interpretation rather than sensation. In Contemporary Chinese Pulse Diagnosis, it must be remembered that Empty has no Organ and/or Blood depths or Blood depth Separating. This quality represents the loss of contact between Yin and Yang, a Qi Wild pulse. The Absent quality (all depths Separating or Absent) is a sign of deficiency, albeit a severe sign, but Yin and Yang are still in contact with this quality.

THIN AND TIGHT

The sensation of these qualities can be confusing to discern. The Thin quality refers to width and blood deficiency. It does not feel hard. Tight on the other hand, refers to hardness and the process of heat vulcanizing the fluids – Yin deficiency. Although the Tight quality can be described as being narrower than Tense and less narrow than Wiry it is the hardness of the quality that makes the differentiation from the Thin quality. Thin can be present with pliable qualities (Yielding) where it is indicative of blood and qi deficiency, and with hard qualities (Tight) where it is a sign of blood and Yin deficiency.

INTERPRETATION

In short, incongruence between the pulse and other findings suggests greater pathology. The pulse positions that exhibit the greatest instability indicate more advanced pathology. Particular attention should be paid to paradoxical pulse findings, such as the Ropy or Tight qualities in a young person. In all cases the pulse findings must be integrated with the other diagnostic pillars, such as the tongue and history.

STEPS IN INTERPRETATION

Consider Age

There are pulse qualities and pictures, such as Feeble, Absent, Ropy or very Tight qualities, which are totally acceptable in the elderly but which are inappropriate in a young person.

Consider Gender

A very Thin pulse in a man and a very Broad pulse in a woman are inappropriate signs since men tend more to excess heat and women more to blood deficiency. A Thin quality in a man represents a greater degree of deficiency than when found in a woman and a Broad pulse in a woman represents more excess heat than the same pulse in a man.

BROAD FOCUS – LARGE SEGMENT

Initially the large segment and uniform qualities of the pulse are reviewed.

Rate and Rhythm

Evaluate rhythm and rate especially as related to the Heart. Also check for other qualities associated with Heart dysfunction such as Rough Vibration or Changing Intensity on the entire pulse. Take into account the left distal and Heart complementary positions while doing this.

Consider General characteristics

Evaluate the balance of the organism in terms of excess, deficiency and stability of

- Three depths,
- Sides and
- Bilaterally at each Burner

Identify Qualities requiring Special Attention

Immediately Dangerous Qualities:

- Moderately Tense to Leather Like Hollow (Slow or Rapid)
- Yielding Hollow and Interrupted
- Wildly Interrupted- cannot get rate
- Intermittent less than every five beats
- Scattered and Minute
- Spinning Bean
- Unstable, Collapsing

Unusual Qualities:

Hollow (Yielding or Very Tense)
Empty Leather and Empty and Thread-Like
Ropy
Intensity Changing from side to side
Short
Restricted
Dead
Collapsing
Amorphous

Paradoxical Qualities:

Rate goes down on exertion
Thin and Pliable in a young seemingly robust man
Wide and Pounding in a young and seemingly robust woman
Very Superficial pulse in a heavy person
Very Deep pulse in a thin person
Very Tight pulse in a young person
A young person with very deficient proximal positions
A young person with 'Qi Wild' and Yin-Yang separating conditions

CLOSER FOCUS - PRINCIPAL AND COMPLEMENTARY POSITIONS

Next we evaluate the smaller segment of the pulse. Examine each principal and associated complementary position for signs of excess, stagnation of qi, blood and Yin (damp) and deficiency of qi, blood, Yin, Yang and Jing. See Interpretation of Qualities - Activity and Substances, and Appendix 5 Interpretation of Qualities in Complimentary Positions.

Fundamentals of Analysis**Substances (Excess and deficiency of)**

qi,
blood,
Yin,
Yang &
jing

Activity:

Hot and cold, generally in the blood

Internal and External:

Distinguish aspects of the pulse indicative of internal (Deep) or External (Floating) disharmony.

Areas:

Upper, Middle and Lower Burners
Diaphragm
Pelvis /Lower Body

Systems:

Nervous
Circulatory
Digestive
Organ

Stability

Qi ('Qi Wild')
Heart and Circulation
Blood

Activity and Chaos as Indicated by the Pulse

Positions where qualities, Amplitude and Intensity are changing are organs where there is the greatest disorder and the highest degree of dysfunction. An Unstable or Unhomogenous quality anywhere indicates serious disharmony. Empty Qualities and Intensity Changing could mean that the Yin and Yang of a Yin organ have separated. Also Muffled, Dead, Spinning Bean, Choppy, Moderately Tense Hollow and Wiry qualities in any position, are signs of potentially quite serious pathology.

The seriousness of a quality can depend upon location. A Choppy quality is of much more concern in the left distal position (Heart) than in the Pelvic Lower Body position where it can be just a sign of current menstruation. A Muffled quality in most places is often associated with a neoplastic process at some stage of development, but in the left distal position, it might be only a sign of depression.

The findings in one position may not just reflect a characteristic of the entire pulse. Changing Intensity is a common example of a quality found in individual positions. It has a different and special meaning if it also appears on the entire pulse. On the other hand, there can be one position where the Intensity is Changing more dramatically than everywhere else. This case would require focus on the special condition that is affecting the organ of that position.

There are instances in which one position shows a quality that appears nowhere else on the pulse, and is, in fact, inconsistent with the rest of the pulse. For example, a generally Reduced pulse in which the proximal positions are very Taut could be a sign of a deficient person who abstains from sex. (This very situation is described by Dr. Shen as the "Monk's Disease".)

INTEGRATION OF PULSE SIGNS

(Relationships, Diagnosis of Syndromes, Etiology and Prognosis)

Exploration of relationships between data

This integration involves the relationships between the Initial Impression and the individual positions, or the larger and smaller segments. Factors that explain the relationship of several or all of the findings in the service of an overall diagnosis are best illustrated by the following abbreviated examples.

If there are signs of Heat in the Blood, Thin and Tight at the qi depth, extreme tension in the Liver, Kidney Yin deficiency, blood stagnation in the Pelvic Lower Body, heat in the alimentary tract and the entire pulse tends to be Tense, we can postulate a 'Nervous System' Tense condition in which the 'Nervous System' is overworking. This condition creates excess heat in all of the organs including the digestive tract and blood, and drains Yin especially from the Kidneys. The excess heat will cause blood stagnation.

If there are Empty, Deep and Feeble qualities in many parts of the pulse, and signs of blood stagnation in the Pelvic Lower Body, we can postulate chronic disease due to physical overwork including lack of sleep in a mature person, or constitutional deficiency in a younger person. The deficient qi will lead to stagnation of blood, which it cannot move effectively (especially in dependent positions). This stagnation of blood can interfere with circulation and thereby slowly cause Heat in the Blood.

Integration of the pulse with other diagnostic signs and symptoms

The pulse data including the significant relationships found, shows a consolidated picture of energetic drains, stagnation, nourishment and storage. With this information it is possible to delineate the immediate issues and root issues, and to correlate them with the secondary issues and the derivative issues. Concerns such as current prevailing physical and psychological (mental-emotional-spiritual) symptoms, and physical pain must be considered in this process. All of this must then be sensibly connected to the patient's life in terms of constitution and/or life habits. The pulse obtains the best results when this methodology is used in conjunction with: Looking, Listening and Asking.

Immediate issues include the pathologies that are either acute – external pathogenic invasions, present a block to healing – structural dysfunction or acute pain, the system which is showing the most instability or chaos, or those that occur in organ systems that traditionally have the priority for treatment – the Heart as the Emperor, the digestive systems when treating the Earth or middle first.

Root issues involve pathologies in organ systems that have been affected early in life. These include those that have been affected by early insult such as shock and trauma – Heart and Kidneys, but also those that are affected by early environmental deprivation – Liver, Spleen or Lungs.

Secondary issues include pathologies in organ systems that are a result of insult due to life stress. Depending on the individual circumstances these could include any of the organ systems – Liver, Spleen, Lung, Intestines, Stomach etc.

Derivative issues are pathologies that involve either retained pathogens, Blood stagnation or Dr. Shen's systems.

See Appendix 3 Interpretation of Qualities - Summary of Methodology for Interpretation

See Appendix 4 Interpretation of Qualities - Activity and Substances

See Appendix 5 Interpretation of Pulse Qualities and Psychological States

See Appendix 6 Interpretation of Qualities in Complimentary Positions

DISCUSSION OF SYNDROMES

TRAUMA AND SHOCK

Shock is an important, often overlooked etiology of disease. Both physical and emotional shock impact the circulatory system. The circulatory system is highly intricate (the heart pumps 4000 gallons of blood through 60,000 miles of vessels in one day). Physical and emotional trauma has especially pronounced effects on the organism when the event occurs at a young age because the person is not mature and is therefore more vulnerable.

In physical trauma, the Choppy, Flat and Inflated qualities can be used to localize where the trauma occurred. Massive traumas impact the whole pulse. Other signs are horizontal lines under the lower eyelids on the same side, ecchymosis on the tongue on the side of the trauma, a gray color of the face, red hands and a pale face. The long-term impact of physical trauma weakens the Heart as the Heart overworks to compensate for impaired circulation. It must be noted that almost all physical trauma has an emotional component.

In emotional trauma or shock, Rough Vibration is found on the entire pulse. We also find the Flat or Inflated qualities at the left or both distal positions. In rare instances we find a Spinning Bean quality, usually in the upper burner positions. If severe the whole face is blue. If the color is found around the mouth and chin, then the shock occurred in utero or at birth. If found only around the temples or between the eyes, it suggests that the shock occurred later in life.

Symptoms: tired entire life, fatigue, depression, quick to anger, entire body is uncomfortable, more difficulty.

Signs: Tongue red and a little swollen at the tip. The face is green around the mouth if the cause is congenital (birth trauma), and around the chin if constitutional (inherited weakness or insult during pregnancy).

Trauma impairs overall circulation, because all trauma affects the Heart, and the Heart as emperor, governs Circulation. Dr. Hammer sees unresolved trauma as a 'block,' because it mitigates other therapeutic interventions if it is not addressed first.

DR. SHEN'S HEART PATTERNS

Refer to Pages 409-416 in Chinese Pulse Diagnosis, A Contemporary Approach.

The following are conditions described by Dr. Shen that involve Heart function and qualities at the left distal position. It is important to remember:

All shock, emotional or physical, affects the Heart.

Usually there is some concurrent Kidney-Heart disharmony involved with these conditions.

Often there is a progression from one condition to another more serious conditions if there is no intervention.

HEART QI AGITATION

Dr. Hammer now calls ‘Heart Vibration’, ‘Heart Tight’, and ‘Heart Nervous’ varying degrees of Heart Qi Agitation. In Heart Tight the Heart Yin is deficient and in all the Heart qi is agitated or unsettled to varying degrees.

‘Heart Vibration’

(Mild Heart Qi Agitation and Mild Heart Yin Deficiency)

Sensation: Smooth Vibration

Interpretation: Most innocuous is transient smooth Vibration at the left distal position or over the entire pulse at the Qi depth. If more superficial or transient, then it suggests passing worries. An enduring deeper Vibration on the entire pulse indicates a tendency to worry. It may start with a mild emotional shock in a background of mild Heart qi and yin deficiency. Deeper and Rougher Vibration indicates shock, and/or guilt, and fear.

Formula

Shi Chang Pu	2.4 gm	Acori
Chuan Xiong	4.5 gm	Ligusticum
Mu Xiang	4.5 gm	Saussureae
Fu Shen	9 gm	Poria
Yuan Zhi	4.5 gm	Polygalae tenuifoliae
Suan Zao Ren	9 gm	Zizyphus
Yu Jin	9 gm	Rz. Curcumae
Gua Lou Pi	9 gm	Fr. Trichosanthes
Chen Pi	6 gm	Tangerine Peel
Deng Xin Cao [Rush Pith]	5-15 fen	Md. Junci Effusi

‘Heart Tight’

(Moderate Heart Qi Agitation and Heart Yin Deficiency)

Sensation:

Heat from excess: Tight at the Pericardium position like a sharp point is sticking the finger with each beat. If the heat becomes overwhelming, the left distal will feel Tense and Robust Pounding. The rate will be 90-100 BPM

Heat from Deficiency: Whole left distal position feels Tight with a rate of 84-90 BPM. If the condition exists for some time the rate will Slow as the Heart qi diminishes.

Interpretation: Heat from excess or deficiency effecting Heart Yin.

Symptoms: constant worry, tension, restlessness, racing mind, restless sleep marked by constant awakening throughout the night. There is mild to moderate anxiety and irritability, and often complaints of constant worry, and a “racing mind”, restless during day of manic proportions with excess Heat, discomfort in left side of chest over large area.

Formula

Shi Chang Pu	2.4 gm	Acori
Chuan Xiong	4.5 gm	Ligusticum
Mu Xiang	4.5 gm	Saussureae
Fu Shen	9 gm	Poria
Yuan Zhi	4.5 gm	Polygalae tenuifoliae
Suan Zao Ren	9 gm	Zizyphus
Yu Jin	9 gm	Rz. Curcumae
Gua Lou Pi	9 gm	Fr. Trichosanthes
Chen Pi	6 gm	Tangerine Peel

‘Heart Nervous’**(Severe Heart Qi Agitation and Heart Yin Deficiency)**

Sensation:

Less serious type: Left distal Tight with rate of 80-84

More serious type: Left distal Tight, rate 80-84 plus occasional Change in Rate at Rest

Interpretation: Heart Yin is deficient; qi is agitated, erratic, and deficient.

Etiology: Often a constitutional predisposition toward Heart qi deficiency, physical or emotional shock, prolonged deficient heat or heat from excess (Heart Tight).

Symptoms: easily fatigued especially in the morning, restless sleep, frequent waking: in and out of sleep all night, palpitations with activity, frequent and disturbing mood swings, change of mind about people and their own chosen course of life. The person feels as if on a roller coaster and mildly out of control, increased irritability of a relatively mild nature.

Tongue: thin central crack with constitutional predisposition, deeper central line if due to long term Heart qi deficiency.

Formula

Shi di Huang	30gm	Rehmania
Yi Yang Shen	4.5 gm	American Ginseng
Gui Zhi	6-9gm	Cinnamomomi
Huo Ma Ren	9gm	Cannabis
Mai Men Dong	9gm	Ophiopogon
E Jiao	6gm	Ezuus-gelatin
Sheng Jiang	6-9gm	Zingiber
Gan Cao	6gm	Licorice
Xiao Mai	20-50gm	Wheat
Da Zao	5-20gm	Jujube
Long chi	9gm	Dragon teeth
Hu Po	1gm	Succinum (Amber)

HEART QI STAGNATION

'Heart Closed'

Sensation: Flat left distal position

Interpretation: Heart qi stagnation, circulation of qi (and blood) blocked from entering the Heart. This ultimately leads to Heart qi deficiency and diminished peripheral blood circulation. With 'Heart nervous' the shock affects the nervous innervations of the Heart. With 'Heart closed' the substance of the Heart (parenchyma) is slightly affected. Due to major Heart shock in one whose qi is already under developed or deficient. The shock is usually emotional and involves the loss of someone very close, such as a parent. A common shock to the Heart also occurs at birth with the cord around the neck. However, the 'Heart closed' condition can occur later in life due to a major emotional shock, such as sudden bad news or the sudden breakup of a romance when the person withdraws their 'heart' feelings.

Other causes include Heart qi agitation ('Heart nervous') over a long period of time, or even a mild physical shock to the chest when Heart qi is deficient.

Symptoms: According to Dr. Shen, these people tend to be vengeful and spiteful, always in emotional difficulty, chest pain (oppression or shooting pain). The condition is more serious if there is a fixed, pin-pricking sensation.

Formula

Shi Chang Pu	2.4 gm	Acori
Chuan Xiong	4.5 gm	Ligusticum
Mu Xiang	4.5 gm	Saussureae
Fu Shen	9 gm	Poria
Yuan Zhi	4.5 gm	Polygalae tenuifoliae
Suan Zao Ren	9 gm	Zizyphus
Yu Jin	9 gm	Rz. Curcumae
Huang Lian	1.8 gm	Rz. Coptis
Chen Xiang	2.1 gm	Lignum Aquillariae

QI TRAPPED IN THE HEART

'Heart Full'

Sensation: Tense Inflated left distal position

Interpretation: Qi unable to exit the Heart. Due to prolonged breech delivery with the head inside The birth canal. Other causes are sudden and very profound repressed anger at a time when a person is extremely active, chest trauma, or prolonged grief.

Uncorrected, 'Heart full' can develop into either an energetically or even bio-medically enlarged heart see ('Heart large,' below) or hypertension, or both.

Symptoms: Feel tired their entire lives, have little energy and tend towards depression. They are frequently very quick to anger and the entire body may be uncomfortable. There is more difficulty breathing out than in, and some discomfort when lying down on the left side.

Formula

Shi Chang Pu	2.4 gm	Acori
Chuan Xiong	4.5 gm	Ligusticum
Mu Xiang	4.5 gm	Saussureae
Fu Shen	9 gm	Poria
Yuan Zhi	4.5 gm	Polygalae tenuifoliae
Suan Zao Ren	9 gm	Zizyphus
Yu Jin	9 gm	Rz. Curcumae
Huang Lian	2.4 gm	Rz. Coptis
Chen Xiang	2.1 gm	Aquillariae
Wu Wei Zi	4.5 gm	Fr. Schisandra
Mu Li	15 gm	Concha Ostrea
Mai Dong	9 gm	Ophiopogonis Japonici

HEART QI DEFICIENCY**‘Heart Large’**

Sensation: Change in Intensity or Qualities, Rough Vibration left distal position, positive Heart Enlarged position. The rate will precipitously and temporally increase with movement and stress, and one will find widely different rates at different times during a pulse examination.

Interpretation: Severe Heart qi deficiency from constitutional Heart deficiency or prolonged other Heart pathology especially Heart Full and Heart blood stagnation (‘Heart small’) with coronary occlusion over a long period of time. All of these etiologies may be exacerbated by chronic, repressed, and profound anger that occurs especially while active.

Symptoms: Shortness of breath on exertion, difficult breathing lying down, chronic chest pain, extensive and easy fatigue. Sleep is constantly interrupted and severe tiredness is felt in the morning.

Formula (Dr. Hammer)

Yi Yang Shen	4.5 gm	American Ginseng
Hong Shen	4.5 gm	Korean Ginseng [Cooked in Aconite]
Fu Zi	0.25gm	Aconite
Zi He Che	4.5 gm	Placenta
Bai Zi Ren	4.5 gm	Biota Seed
Long Yan Rou	6.0 gm	Longan
Suan Zao Ren	6.0 gm	Zizyphus
Yue Jin	6.0 gm	Curcumae [Tuber]
Shu Di Huang	9.0 gm	Rehmannia [Cooked]
Ye Jiao Teng	9.0 gm	Polygalae Multifloriae
Yuan Zhi	9.0 gm	Rx Polygalae Tenuifolae
Sha Ren	1.5 gm	Fr. Seu Se. Amomi
Fo Shou	3.0 gm	Fr. Citri Sarcodactylis
Dan Shen	9.0 gm	Salvia
Mai Men Dong	6.0 gm	Ophiopogon
Chang Pu	6.0 gm	Acorus
Gan Cao	3.0 gm	Licorice
Chuan Xiong	4.00gm	Sezchuan Lovage
Long Gu	5.00gm	Dragon Bone
(Substitute He Huan Pi [Albiziae] 10 gm for Chuan Xiong w/ depression)		

HEART YANG DEFICIENCY

‘Heart Disease’

Sensation: Rapid, arrhythmic (Interrupted or Intermittent), sometimes Hollow on entire pulse, left distal is Deep to Absent or Empty, Intensity Changing and Qualities Changing, Unstable, possibly Slippery. Proximal positions are usually Feeble/Absent. Rate decreases on exertion. Heart Enlarged position is present.

Interpretation: Heart Yang deficiency. This is the end of the process in the gradual depletion of Heart qi and blood described under the headings of other Heart disorders, especially ‘Heart weak,’ ‘Heart full,’ ‘Heart large,’ and ‘Heart small.’

Symptoms: Same as Heart Full and Heart Large with greater chest pain and fatigue, shortness of breath on exertion, spontaneous beady daytime perspiration, coldness in body and especially limbs, pitting edema, need to sleep propped up.

Formula (Dr. Hammer)

Yi Yang Shen	4.5 gm	American Ginseng
Hong Shen	4.5 gm	Korean Ginseng
Zi He Che	4.5 gm	Placenta
Bai Zi Ren	4.5 gm	Biota Seed
Long Yan Rou	6.0 gm	Longan
Suan Zao Ren	6.0 gm	Zizyphus
Yue Jin	6.0 gm	Curcumae [Tuber]
Shu Di Huang	9.0 gm	Rehmannia [cooked]
Ye Jiao Teng	9.0 gm	Polygalae Multifloriae
Sha Ren	1.5 gm	Fr. Seu Se. Amomi
Fo Shou	3.0 gm	Fr. Citri Sarcodactylis
Dan Shen	9.0 gm	Salvia
Mai Men Dong	6.0 gm	Ophiopogon
Chang Pu	6.0 gm	Acorus
Gan Cao	3.0 gm	Licorice
Fu Zi	0.25 gm	Aconite
Huang qi	10.0 gm	Astragalus
Shan Yu Ru	6.0 gm	Cornus
Gou Qi Zi	6.0 gm	Lycium Berry
Du Zhong	6.0 gm	Eucommia
Dong Chong	2.0 gm	Cordyceps
Fu Xiao Mai	3 gm	Tritici Levis Semen
Ge Jie	3.0 gm	Gecko
Yin Yang Huo	8 gm	Epidmedii
Rou Cong rong	10 gm	Cistanches

HEART BLOOD STAGNATION

‘Heart Small’

Sensation: Left distal very Flat, serious type - very Deep, Thin and Feeble left distal position, less often with a Choppy quality.

Interpretation: Heart blood stagnation, coronary artery spasm and angina. The pattern is usually the result of a sudden shock during which time the coronary arteries constrict depriving the Heart of qi and blood. This spasm leads to an insufficient oxygen supply to the coronary muscles. In Dr. Shen’s terms, the Heart is “suffocating.”

More serious type is from profound Heart shock at birth – prolonged labor with head outside the canal or cord around the neck. Less serious is temporary and from a sudden shock to the Heart with transient symptoms.

Symptoms: Lifelong unexplained fear, night terrors, may be shortness of breath, chest pain, palpitations and cold extremities, awake after five hours of sleep and cannot return to sleep.

Formula

Shi Chang Pu	2.4 gm	Acori
Chuan Xiong	4.5 gm	Ligusticum
Mu Xiang	4.5 gm	Saussureae
Fu Shen	9 gm	Poria
Yuan Zhi	4.5 gm	Polygalae tenuifoliae
Suan Zao Ren	9 gm	Zizyphus
Yu Jin	9 gm	Rz. Curcumae
Gua Lou Pi	9 gm	Fr. Trichosanthes
Chen Pi	6 gm	Tangerine Peel
Ding Xiang	2.4 gm	Caryophylli

HEART BLOOD DEFICIENCY

‘Heart Weak’

Sensation: Large Change in Rate on Exertion (>20 beats/min), left distal position Thin.

Interpretation: Heart blood deficiency. While constitutional Heart qi deficiency is sometimes a predisposing factor, Heart blood deficiency is most often due to prolonged and severe Heart qi agitation [‘Heart nervous,’]. Can also be a result of Kidney essence deficiency, Spleen qi deficiency, and gradual blood loss over time.

Symptoms: Palpitations through the day especially with activity. Sleep is steady for a few hours then waking, but is able to return to sleep. They are tired in the morning and poor memory and concentration.

Formula

Dang Gui	6 gm	Rx. Angelicae Sinensis
Chuan Xiong	4.5 gm	Rx. Ligustici Wallichii
Shu Di	9 gm	Rehmannia
Yuan Zhi	4.5 gm	Rx. Polygalae
Wu Wei Zi	3 gm	Schizandra Chinensis
Dan Shen	4.5 gm	Salvia Miltorrhizae
Sha Ren	2.4 gm	Rx. Glehniae Littoralis
Mai Men Dong	9 gm	Tu. Ophiopogonis Japonici
Fo Shou Kan	4.5 gm	Citri Sarcodactyli Fructus

RETAINED PATHOGENS

TOXICITY

Etiology can occur from several different sources. Exposure to environmental toxins and chemical toxicity from drug abuse or medications can lead to a toxic level of foreign substances in the body. Dr. Hammer first encountered this condition in artists using highly toxic solvents in poorly ventilated rooms and with the use of acetylene torches in art and industry. Dr Hammer believes we are all being subjected to the modern post-industrial experiment and are exposed to increasing levels of toxicity in our modern lives.

Liver qi stagnation or deficiencies of the Liver prevent the Liver from detoxifying adequately. The increasing levels of toxicity affect the circulation of blood leading to conditions of blood stagnation in the tissues. The pulse is a valuable guide offering an objective assessment.

Toxicity is a growing concern and an area that requires further research.

Sensation: Choppy on the whole pulse with First Impressions and frequently also in the left middle position and right distal position. With some toxins such as solvents the rate will be very Slow.

Symptoms: Moderate to severe fatigue, skin problems (e.g. psoriasis, eczema), arthritis, painful joints.

PARASITES

Sensation: A Slippery quality at the Organ depth on the entire pulse or at the left middle position or on the left side.

Interpretation: This can be a sign of a retained pathogen. It can be due to parasites existing in one or more of the body systems and may be there only when the organism releases cysts or larvae.

This is an area that is under further investigation by Dr. Hammer.

DAMP AND HEAT

Sensation: Robust Pounding and Slippery qualities found at the Organ depth on the entire pulse or at the left middle position or on the left side.

Interpretation: This can be a sign of a retained damp heat pathogen. This can present as a chronic systemic infection such as hepatitis.

As with retained parasites, retained damp and heat pathogens are also under further investigation.

APPENDICES

APPENDIX 1.

HAMMER-QUALITIES CLASSIFIED ACCORDING TO SENSATION

The following summarizes the Contemporary Chinese Pulse Diagnosis classification based on sensation that is an attempt to provide a more unified integrated coherent system.

Rhythm

Rhythm At Rest - Arrhythmias

Rate Measurable Without Missed Beat

Rate Changing At Rest

Occasionally

- Small
- Large

Constantly

- Small
- Large

Rate Measurable With Missed Beat

Intermittent [Regularly Irregular]

Constantly Intermittent

Frequently Missed Beats

Infrequently Missed Beats

Inconsistently Intermittent

Interrupted [Irregularly Irregular - can still get rate]

Occasional

Constant

Rate Not Measurable

Interrupted [Irregularly Irregular - cannot get rate]

Hollow Interrupted [Intermittent]

Literature

Hurried

Knotted

Rhythm At Rest – Pseudo Arrhythmias

(Qualities Confused for Arrhythmias)

Hesitant

Changing Intensity and Amplitude

Unstable in 1 position

Rhythm On Exertion

Rate Increases

Small Change
Large Change
Rate Decreases

Stability

Qi

Entire Pulse

Circulation

Intensity Changing Occasionally

'Qi Wild'

Burners and positions vary greatly in qualities.

Empty

Empty and Threadlike

Leather

Minute

Quality Changing

Scattered

Yielding Hollow Full-Overflowing

Sides vary greatly in substance

Empty, Hollow or Floating and Interrupted

Muffled

Intermittent

Change in Intensity shifting from side to side

One Position

[Extreme qi, Yin, blood and essence deficiency of a Yin Organ]

Empty

Quality Changing

Intensity and Amplitude Changing

Nonhomogeneous

Unstable

Blood

Circulation out of control at individual positions

Leather like Hollow

Rapid

Slow

Out of control over entire pulse

Very Tense or Tight Hollow Full-Overflowing

Circulation erratic over entire pulse

Constant Change in Intensity

Rate

Normal

Rapid

Bounding

Slow

Mildly Slow
Moderately Slow
Very Slow

Right and Left Side Pulse Vary In Rate

Volume

Robust

Hollow Full-Overflowing

Robust Pounding

Flooding Excess

Inflated

Inflated Yielding

Inflated Moderately Tense

Inflated Very Tense

Reduced

Suppressed Wave at Qi depth

Suppressed Pounding

Yielding at the Qi depth

Qi depth Diminished

Qi depth Absent

Spreading [at Blood depth]

Blood depth Diminished or Yielding Partially Hollow

Flooding Deficient [Retarded, Push Pulse]

Reduced Pounding

Reduced Substance

Diffuse

Deep

Feeble-Absent [Weak, Frail, Infirm, Evanescent]

Flat

Muffled

Dead

Depth

Superficial

Floating

Cotton [Sad]

Empty

Leather [Drum-like, Tympanic]

Minute

Scattered

Hollow

Yielding Partially Hollow

Submerged

Deep [Sinking]

Hidden [Recondite]

Firm

Width**Wide****Wide Blood****Excess**

Blood Unclear
Blood Heat
Blood Thick
Tense Hollow Full-Overflowing

Deficient

Leather-Like Hollow

Wide Qi**Excess**

Flooding Excess

Deficient

Yielding Hollow Full-Overflowing
Diffuse
Yielding Ropy

Narrow**Thin [Fine, Thready, Small]**

Thin Tight
Thin Yielding

Tight and Wiry**Empty and Thread-Like**

Tight Empty and Thread-Like
Yielding Empty and Thread-Like

Length**Extended**

Long

Diminished

Short [Brief]
Short Yielding
Short Tense
Restricted
Spinning Bean

Shape**Fluid**

Slippery [Quick, Rolling]

Non-Fluid

Even Non Fluid

Taut

Tense

Tight

Wiry

Ropy

Ropy Pliable

Ropy Tense

Ropy Tight

Uneven Non Fluid

Choppy

Vibration

Smooth

Rough

Superficial

Deep

Miscellaneous

Unhomogenous

Bean Spinning

Doughy

Amorphous

Collapsing

Split

Electrical

Qualifying Terms

Rough

Smooth

Vague [Subtle]

Subtle

Biting

Transient [Ephemeral]

Separating

Anomalous Qualities

San Yin Ma

Fan Quan Ma

Ganglion

Local Trauma

Split Quality

APPENDIX 2.

CLASSIFICATION OF TERMINOLOGY

The following chart from the NCCAOM is included here to demonstrate the confusion currently facing the profession.

Comparison of Pulse Terms from Different Sources

Li Shi Zhen	Wang Shu He	Kaptchuk	Shanghai	Felix Mann	Cheung et al
Floating	Superficial	Floating	Floating	Floating	Floating
Deep	Deep	Deep	Submerged	Deep/sunken	Sinking
Slow	Slow	Slow	Slow	Slow	Slow
Raid	Rapid	Rapid	Quick	Rapid	Rapid
Empty	Vacuous	Empty	Weak	Empty	Deficient
Full	Replete	Inflated	Strong	Full	Excess
Wiry	Bowstring	Wiry	Wiry	Wiry	Bowstring
Slippery	Slippery	Slippery	Slippery	Slippery	Slippery
Fine	Fine	Thin	Fine	Fine	Thready/small
Short		Short	Short	Short	Short
Knotted	Bound	Knotted	Knotted	Knotted	Nodular
Intermittent	Interrupted	Intermittent	Intermittent	Intermittent	Replacement
Big	Big	Big	Big	Overflowing	Big
Choppy	Choppy	Choppy	Rough	Choppy	Difficult
Tight	Tight	Tight	Tight	Tight	Tight
Long		Long	Long	Long	Long
Hasty	Skipping	Hurried	Hasty	Hurried	Accelerated
Leisurely	Moderate	Moderate	Normal	Slowed down	Relaxed
Minute	Faint	Minute	Weak	Minute	Diminutive
Hollow	Scallion stalk	Hollow	Hollow	Hollow	Leek stalk
Leather	Drum skin	Leather	Leather	Leather	Leather

APPENDIX 3.

SUMMARY OF METHODOLOGY FOR INTERPRETATION

Quick Overview of the Entire Pulse

Sex and age in terms of what is appropriate or paradoxical
Unusual qualities
Paradoxical findings

Broad Focus

In-depth evaluation

A. Observations

Uniform qualities

Rhythm and rate: outstanding abnormalities
Unusual waveform
Above qi, qi, blood, and organ depths

Areas

Neuro-psychological
Burners: similar qualities bilaterally at upper, middle, and lower
Diaphragm
Pelvis/lower body
Sides

Stability

Separation of yin and yang
'Qi wild'
Blood out of control (hemorrhage)

Systems

'Nervous system'
'Circulatory system'
'Digestive system'
'Organ system'

B. Diagnostic impressions

Closest Focus

A. Substances

Qi
Yin
Yang
Blood
Dampness
Wind
Food
Essence
Parenchyma

B. Activity

Heat

- Excess
- Deficiency

Cold

- Excess; internal, external
- Deficiency

C. Organs (principal and complementary positions)

Heart-circulation

Lungs

Liver

Spleen-Stomach

Kidneys

D. Diagnostic impressions

Psychology

Mind, emotion, and spirit

Interpretation

Initial formations are not set in stone and serve primarily as a starting point for a flexible process that increases with precision in the course of the success and failure of treatment strategies. Consider multiple etiologies.

A. Summary of specific diagnostic categories

B. Formulation

Current prevailing issues

Root issues and etiology of disharmonies

Derivative issues

Primary derivative issues

Secondary derivative issues

Analysis and synthesis of significant patterns and overall diagnostic concept

Management

A. Lifestyle strategies

B. Referrals

C. Acupuncture, herbs, and other healing strategies

For the sake of discussion these strategies are separated into stages that in reality must be flexible and generously blended as the clinical situation unfolds into a clearer diagnostic picture:

Immediate interventions

- If these interventions succeed, proceed to the next step:

Intermediate interventions

- If these interventions succeed, proceed to the next step:

Long-range minor and major interventions

Client History and Integration with Pulse Interpretation

A. Client history—age, gender, occupation

Chief complaints

Medical history

- Review of systems
- Habits
- Childhood
- Family
- Birth

B. Symptoms and the pulse

Analysis of symptoms with pulse diagnosis

Amendments to analysis and synthesis of significant patterns and diagnostic concepts

Formulation of Treatment Plan

A. Immediate Issues

1. (List issues)
- 2.
3. etc

B. Root Issues

1. (List issues)
- 2.
3. etc

C. Secondary Issues

1. (List issues)
- 2.
3. etc

D. Derivative Issues

1. (List issues)
- 2.
3. etc

The following are examples of what to consider for each category.

A. Immediate Issues.

External pathogenic invasion.

Structure.

Acute pain.

Instability.

Qi Wild.

Heart shock.

Digestive system disorders that are crucial for healing – treat the Earth or middle first.

B. Root Issues

Organs that have been affected early in life.

Heart

Kidney

(Could be Liver or Spleen)

C. Secondary Issues

Organs that are affected by life stress.

Liver

Spleen

Lung

Intestines

Etc

D. Derivative Issues

Retained pathogens

Blood stagnation

APPENDIX 4.

INTERPRETATION OF QUALITIES - ACTIVITY AND SUBSTANCES

Activity	Heat	Excess (stagnation)		Deficiency
		External	Internal	
	Heat	External	Floating Yielding	Tight, Wiry, Tight Ropy
		Internal	Tense, Robust Pounding, Blood Heat, Blood Thick, Hollow Full-Overflowing, Flooding Excess, Tense Ropy, Moderately Tense Inflated,	
	Cold	Excess (stagnation)		Deficiency
		External	Floating Tense	
	Cold	Internal	Tense or Tight (usually one position [rare]), Hidden Excess	Yielding or Absent at qi depth, Spreading Deep, Feeble-Absent, Empty, Yielding Hollow Full-Overflowing, Hidden Deficient, Empty Thread-like, Minute, Scattered,
		Excess (stagnation)		Deficiency
Substances	Qi	External	Cotton, Floating, Slippery	Yielding, Diminished, or Absent at qi depth; Spreading,
		Internal	Taut, Tense, Muffled, Bean (Spinning), Short Excess; Inflated, Rough Esophagus position,	Flooding Deficient, Reduced Substance, Reduced Pounding, Diffuse, Deep, Feeble-Absent, Short Deficient, Yielding Ropy Ht qi deficiency Exertion Rate change < 8, Ht qi deficiency Change of Intensity entire pulse,

Substances	Blood	Excess (stagnation)		Deficiency
		Tissues	Choppy, Tense Ropy, Muffled, Liver Engorgements positive, Very Tense Inflated,	Thin, Spreading, Blood depth diminished or absent, Hollow, Yielding Partially Hollow, Leather,
	Vessels	Blood Unclear, Blood Heat, or Blood Thick; Hollow Full-Overflowing Slippery blood depth; Rough Vibration at blood depth;	Minute, Ht blood deficiency Exertion Rate change <12,	
	Yin	Excess (stagnation)		Deficiency
	Slippery, Muffled		Tight, (Tight may also indicate pain) Wiry, Ht yin deficiency Hesitant Wave Ropy; Empty Thread-like, Leather, Minute, Tight Ropy	
Yang	Excess (stagnation)		Deficiency	
	Very Taut-Tense in proximal positions (‘Buddha’s pulse’)		Deep, Feeble-Absent, Proximal Positions Deep, Proximal Positions Feeble-Absent, Ht yang deficiency Exertion Rate change <1, Empty, Yielding Hollow Full-Overflowing, Hidden Deficient, Empty Thread-like, Minute, Scattered, Hollow Interrupted-Intermittent, Change in Qualities (also ‘Qi Wild’)	
Essence	Excess (stagnation)		Deficiency	
	Very Taut-Tense in proximal positions (‘Buddha’s pulse’)		Yin essence – Wiry Neuro-psych positions, Yin essence – Leather, Neuro-psych positions, Yang essence – Doughy psych positions,	

Other	Wind	External	Internal
		Floating	Floating Tight, Tight-Wiry Hollow Full-Overflowing,
	Food	Excess (stagnation)	
		Slippery quality at the Esophagus position Inflated at the right middle position	
	Parenchyma	Damage to the parenchyma	
		Rough Vibration at individual and complementary positions.	
	Constitution	Constitutional deficiency	
		Proximal positions very reduced qualities in young and middle aged person (in absence of life with extreme overwork, over exercise or illness.	

APPENDIX 5.

INTERPRETATION OF PULSE QUALITIES AND PSYCHOLOGICAL STATES

Pulse Quality	Interpretation
Occasional Rate change at rest	Racing, constantly shifting and agitated ('grasshopper') mind, mood, and behavior
Interrupted, Intermittent	Fear; shifting moods
Hesitant wave	Pushes self mentally, obsessive
Hollow Full-Overflowing	Repressed hot labile emotions; hot temper expressed rarely or unpredictably
Flooding Deficient	Pushes self physically, tendency towards depression
Yielding Hollow Full-Overflowing	Anxiety, panic, labile emotions and quick to depersonalization, delusions
Exertion Rate increase > 20	Memory and attention span diminished; focus wanders mildly to moderately
Exertion Rate increase < 8	Concentration impaired after short time
Occasional Change in Intensity (entire pulse)	Tension; occasional external stress responding with internal conflict
Constant Change in Intensity (entire pulse)	Concentration impaired after moderate period of time; moderate mental lethargy
Change in Intensity shifting from side to side	Profound unexpressed fear Current significant interpersonal conflict
Sides vary greatly in substance (husband imbalance)	Severe intra- and interpersonal conflict and anguish
Rough Vibration uniformly entire pulse	Heart shock
Smooth Vibration uniformly entire pulse	Tendency to worry
Muffled uniformly entire pulse	Depression, lack of joy
Tense Tight entire pulse, all principal positions	Nervous System Tense - hyper vigilant
Slow Rate	Tendency towards depression
Rapid Rate	Tendency towards anxiety
Pulse Quality	Interpretation
Qi depth Yielding or Feeble-Absent, Blood depth Spreading	Tendency toward depression increases with increasing qi deficiency
Diffuse, Reduced Substance, Reduced Pounding, Deep, Feeble, Absent, Deep	Tendency to depression and to withdrawal, especially under stress
Cotton	'Sad pulse' feeling stuck
Flat LDP	Vengeance; slow, hidden rage
Deep to Feeble Absent proximal positions	Tendency to endogenous depression
Diaphragm especially on the left	'Divorce pulse' suppression of tender feelings in conflict with want to move forwards
Empty	Losing center; feelings unbalanced; cannot find place in life; feeling lost; posttraumatic syndrome
Heart – Separation of yin and yang	Mental instability, confusion
Lungs – Separation of yin and yang	Intractable grief; difficulty making transitions, taking in the new and letting go of past due to lack of strength to change and evolve

Pulse Quality	Interpretation
Liver – Separation of yin and yang	Tendency to live in mild delusional state with grandiose plans that are never executed; easily frustrated; emotional lability (especially anger)
Spleen – Separation of yin and yang	Tendency to ruminate aimlessly and unproductively
Kidney – Separation of yin and yang	Tendency to profound, recurrent, unexplained (endogenous) depression
Leather	Memory and attention span severely diminished; focus wanders; agitated; losing center; feelings unbalanced; cannot find place in life; feeling lost
Yielding Hollow Full-Overflowing	Anxiety, panic, labile emotions and quick to depersonalization, delusions
Split Vessel	Pre-occupation with death, including suicide

APPENDIX 6.

INTERPRETATION OF QUALITIES IN COMPLIMENTARY POSITIONS

Position	Pulse Quality	Interpretation
Neuro- Psychological	Doughy	Kidney Yang-Essence deficiency
	Rough Vibration	Intractable headaches
	Choppy	Head trauma
	Change of Intensity	Dizziness
	Slippery	Allergies/pollutants
	Robust Pounding	Head trauma, seizures
	Smooth Vibration	Worry, Heart Qi Agitation
	Inflated	Qi Stagnation
	Flat	Qi Stagnation
	Tight	Parenchymal damage to CNS
	Muffled	Use of psychedelics
	Change of Qualities	Severe impaired function
Reduce Qualities: Reduced Substance, Diffuse, Deep, Feeble-Absent, etc	Impaired function	
Large Vessel	Inflated	Aneurysm
	Tense Hollow Full-Overflowing	Hypertension
Pericardium	Tight	Excess heat
	Slippery	Phlegm-heat
	Concentration of qualities	Defensiveness
Heart Enlarged	Inflated	Energetic enlargement, Heart Qi- Yang deficiency
	Rough	Energetic enlargement, Heart Qi- Yang deficiency
Mitral Valve Position	Smooth Vibration	Mild Heart Qi deficiency
	Slippery	Mitral Valve Prolapse
Special Lung Position	Tense	Qi stagnation and excess Heat
	Tight	Yin deficiency
	Wiry	Extreme Yin deficiency
	Rough Vibration	Parenchymal damage
	Slippery	Dampness or Phlegm
	Thin (Narrow)	Stagnation
	Restricted	Severe stagnation
	Inflated	Trapped Qi
	Empty	Recent grief
	Choppy	Inhaled toxins
	Muffled	Stagnation of all substances, neoplasm
	Change of Intensity	Impaired function
	Change of Qualities	Severe impaired function
	Floating	Exterior condition
	Reduced Qualities	Impaired function
Diaphragm	Inflated, more on left side	Suppressed tender feelings replaced by anger
	Inflated, more on right side	Heavy lifting, overuse of upper body
	Little or no inflation	No relationship or perfect relationship
	Inflated (other explanations do not fit)	Possibility of Hiatal Hernia

Position	Pulse Quality	Interpretation
Distal Liver Engorgement	Tight	Liver Blood stagnation
	Rough	Liver Blood stagnation
	Inflated	Liver Blood stagnation
Radial Liver Engorgement	Tight	Liver Blood stagnation
	Rough	Liver Blood stagnation
Ulnar Liver Engorgement	Inflated	Liver Blood stagnation
Pleura	Tight	Past or current Lung illness
	Rough	Past or current Lung illness
Esophagus	Inflated	Compromised function and Qi stagnation
	Rough	Parenchymal damage, impaired function
	Slippery	Food stagnation
Spleen	Inflated	Spleen Qi deficiency from Kidney Qi-Yang deficiency
Gall Bladder	Tight and Wiry	Inflammation and tissue irritation (chronic heat)
	Rough Vibration	Parenchymal damage
	Choppy	Stones, micro-bleeding and necrosis
	Slippery	Damp
	Tense	Excess heat
	Flooding Excess	Infection (excess heat)
	Inflated	Trapped gas (associated with infection)
	Muffled	Stagnation of all substances, neoplasm, stones
	Change of Intensity	Impaired function
	Change of Qualities	Greater impaired function
Stomach – Pylorus Extension	Inflated	Qi deficiency, prolapse
	Tense	Excess heat
	Robust Pounding	Excess heat
	Tight and Wiry	Inflammation and pain (chronic excess heat)
	Rough Vibration	Parenchymal damage
	Choppy	Micro-bleeding
	Flooding Excess	Infection
	Changing Intensity	Impaired function
	Change of Qualities	Greater impaired function
	Muffled	Stagnation of all substances, neoplasm
Reduced qualities	Impaired function	

Position	Pulse Quality	Interpretation
Large Intestine	Inflated	Gas, Qi stagnation
	Slippery	Dampness
	Robust Pounding	Excess heat
	Tense	Excess heat
	Tight and Wiry	Inflammation (chronic excess heat), loose stools
	Biting	Pain
	Choppy	Micro-bleeding
	Muffled	Stagnation all substances, neoplasm, impact feces
	Tense	Excess heat, constipation
	Flooding Excess	Infection, severe excess heat
	Change of Intensity	Impaired function
	Change of Qualities	Greater impaired function
	Reduce Qualities	Impaired function
Small Intestine	Tense	Excess heat
	Robust Pounding	Excess heat
	Tight and Wiry	Inflammation (chronic excess heat), loose stools
	Rough Vibration	Parenchymal Damage
	Choppy	Micro-bleeding
	Inflated	Gas, Qi stagnation
	Slippery	Dampness
	Flooding Excess	Infection, severe excess heat
	Muffled	Stagnation of all substances, neoplasm
	Biting	Pain
	Change of Intensity	Impaired function
	Change of Qualities	Impaired function
	Reduced Qualities	Impaired function
Pelvis Lower Body	Choppy	Blood stagnation
	Tight and Wiry	Pain, inflammation
	Rough Vibration	Parenchymal damage
	Muffled	Stagnation of all substances, neoplasm
	Flooding Excess	Infection, severe excess heat
	Change of Intensity	Impaired function
	Robust Pounding	Excess heat
	Change of Qualities	Impaired function
Reduced Qualities	Impaired function	

APPENDIX 7.

DR SHEN FORMULAS

Qi Wild

Dang shen	10 gm	Rx. Codonopsis
Huang qi	10 gm	Rx. Astragali
Sang ji sheng	12 gm	Ram. Loranthi
Si gua luo	6 gm	Fasc. Vasc. Luffae
Yuan zhi	6 gm	Rx. Polygalae
Wu wei zi	2 gm	Fr. Schisandra
Mai men dong	10 gm	Rx. Ophiopogonis
Duan long gu	18 gm	charred Os Draconis

Hesitant Wave (Tian Wang Bu Xin Tang)

Sheng di huang	9-12gm	Rehmannia (raw)
Xuan shen	6-9gm	Scrophularia
Tian men dong	6-9gm	Asparagus
Mai men dong	6-12gm	Ophiopogon
Dang gui	6-9gm	Tang-kuei
Dan shen	6-12 gm	Salvia
Ren shen	9-12 gm	Ginseng
Fu Shen	6-9gm	Hoelen
Wu wei zi	6-9gm	Schizandra
Bai zi ren	6-9gm	Biota
Suan zao ren	6-12gm	Zizyphus
Yuan zhi	6-9gm	Polygala Multiflora
Jie geng	3-6gm	Platycodon
Long Gu	15-30gm	Dragon bone

Flooding Deficient wave

Ren Shen	9gm	Radix Ginseng
Huang Qi	12gm	Radix Astragali
Bai Zhu	6gm	Atractylodes
Fu Shen	10gm	Sclerotium Poriae
DangGui	4gm	Radix Angelica
BaiShao Yao	9gm	Radix Peonia
Shu Di Huang	9gm	Radix Rehmanniae
Chuan Xiong	4gm	Rhizoma Ligustici
Rou Gui	9gm	Cortex Cinnamomi
GanCao	1.5gm	Radix Glycyrrhizae
Long yan rou	6gm	*Longan
Yin Yang Huo	6gm	*Epimedi

Blood Unclear

Dang Gui	6 gm	Rx. Angelicae Sinensis
Sheng Di	9 gm	Rehmannia
Chi Shao	9 gm	Red Peony
Gan Cao	4.5 gm	Licorice
Xia Ku Cao	9 gm	Prunellae
Yi Yi Ren	12 gm	Schizandra
Mu Dan Pi	6 gm	Mouton
Luo Huan Guo	9 gm	Fr. Momordicae-Arbut Fruit
Ze Xie	9 gm	Alismatis Plantago-aquaticae

Blood Heat

Dang Gui	6 gm	Rx. Angelicae Sinensis
Sheng Di	9 gm	Rehmannia
Chi Shao	9 gm	Red Peony
Gan Cao	4.5 gm	Licorice
Xia Ku Cao	9 gm	Prunellae
Mu Dan Pi	6 gm	Mouton
Luo Huan Guo	9 gm	Fr. Momordicae-Arbut Fruit
Ze Xie	9 gm	Alismatis Plantago-aquaticae
Shan Dou Gen	9 gmm	Rx. Sophorae Subprostratae

Blood Thick

Dang Gui	6 gm	Rx. Angelicae Sinensis
Sheng Di	9 gm	Rehmannia
Chi Shao	9 gm	Red Peony
Gan Cao	4.5 gm	Licorice
Xia Ku Cao	9 gm	Prunellae
Mu Dan Pi	6 gm	Mouton
Luo Huan Guo	9 gm	Fr. Momordicae-Arbut Fruit
Dan Shen	6 gm	Salvia
Hong Hua	4.5 gm	F. Sophorae Japonicae

Tense Hollow Full Overflowing Wave

Dang Shen	9 gm	Codonopsis
Chuan Xiong	4.5 gm	Ligusticum
Qiang Huo	4.5 gm	Nototyergium
Sang Ji Sheng	12 gm	Loranthi seu Visci
Yuan Zhi	4.5 gm	Polygolae Tenufoliae
Wu Wei Zi	4.5 gm	Schizandra
Long Gu	12 gm	Os Draconis
Mu Li	12 gm	Co. Ostreae
Xiang Fu	4.5 gm	Cyperus

REFERENCES

- Hammer, Leon. Chinese Pulse Diagnosis, A Contemporary Approach. Seattle, WA: Eastland Press, 2001
- Johns, Robert. The Art of Acupuncture Techniques. Berkeley, CA: North Atlantic Books, 1996
- Ni, Maoshing. The Yellow Emperor's Classic of Medicine. A New Translation of the Neijing Suwen with Commentary, Boston, MA: Shambala, 1995
- Li Shi Zhen. Pulse Diagnosis, (Translation by Hoc Ku Huynh and G Seifert, Sydney) Brookline, MA: Paradigm Publications, 1981
- Nguyen, Quang Van. Fourth Uncle in the Mountain, New York, NY: St Martin Press, 2004
- Soulie de Morant, George. Chinese Acupuncture, Translation by Lawrence Grinnell et al. Brookline, MA: Paradigm Publications, 1944
- For articles by Dr. Hammer visit www.dragonrises.net
- For information about classes visit www.dragonrises.org