PULSE DIAGNOSIS

Learning various distinct and overlapping approaches and ways to interpret the meaning of pulse qualities mainly from the perspective of Chinese and Ayurvedic pulse diagnosis.
Pulse diagnosis evaluates only one parameter.

HISTORICAL BACKGROUND

The 4 Major Texts that Document the development and use of Pulse Diagnosis in Chinese Medicine:

1. **Nei Jing -- Yellow Emperor's Classic of Medicine between 300-100 BCE**

2. **Nan Jing -- Classic of Difficult Issues -- between the 1st and 2nd centuries CE**

3. **Mai Jing - by Wang Shu-He in the 2nd century. He named the 24 specific pulse qualities and the associated Cun Kou and each specific Cun, Guan, Chi pulse positions.**

4. **Bin Hue Mai Xue - Li Shi Zhen 1564 BC being a summation of all the pulse knowledge extant at the time.**

Avicenna c980 - 1037 Persian polymath who wrote almost 450 treatises on a wide range of subjects. His most famous books on The Book Healing and the Canon of Medicine.

Sanctorius 1561 - 1635 Sanctorius "Weighting Box" for 30 years Sanctorius weighed himself, everything he ate, his urine, feces. He compared the weight of what he had eaten to that of his waste products. The latter being considerably smaller. Giving rise to the theory of 'insensible perspiration" and the first study of metabolism.

St. John Floyer 1649 - 1734 He invented a watch to measure the rate of the pulse. In his book "The Physician's Pulse Watch" he describes how to use it and attempts to explain how 'The Chinese are of Feeling the Pulse'.

Chinese Pulse Diagnosis was first described in the Yellow Emperor's Classic and later int he Pulse Classic. Xu Dachun (1693-1771) produced a chapter on the pulse. If the pulses were in harmony, it meant health; if there was discord, it meant disease.

Pulse Diagnosis continues to evolve. Modern literature demonstrates alternate pulse position methods, Tietao Den identifies the four methods of:
"lifting, pushing, pressing and rolling"
Still another method of "sliding" which is to move fingers along the vessel to determine its length.

Maoist Chinese Medicine - Scientific Discipline in China. A tendency towards logic and discipline to provide a more homogeneous face to Chinese medicine led to a deletion of its classical and folk traditions. It was found that failures in 1950's pulse diagnostic studies with poor outcomes and a consequent lessening of the importance of pulse diagnosis, relegating it mostly to confirming other diagnostic measures.

Galen was the great master of pulse diagnosis and wrote a treatise on the subject entitled De Pulslbus. But even Galen candidly admits of his struggles in measuring pulse diagnosis as he writes in the following passage: "For many years, I was doubtful about clearly discerning the movement of contraction by touch, and I shelved the question until such time as I could learn enough to fill the gap in my knowledge. After that, the doors of the pulse were open to me.

A health care practitioner of Western therapies lays only two fingers on the inside of the patient's wrist to test the pulse of blood. The average adult pulse is 60 to 80 beats per minute.

Pulse Taking in Traditional Chinese Medicine:

1. **CUN - upper (carpal position)**
   GUAN - middle (Median position)
   CHI - lower
2. **5 element pulses based on Worsleys approach is simply measuring the relative strength of each pulse.**
3. **Japanese Keiraku chiryo used on the 6 deep positions to identify 4 general patterns of weakness.**
4. **TCM approach classifies the pulse in terms of 28 or so traditional pulse types.**

The pulse is only one aspect of whole body assessment.

There are 4 Main parameters to consider for pulse diagnosis:

1. **POSITION (wei) at which the pulse could be felt**
2. **PACE (sho) of the pulse relating to both rate and rhythm**
3. **FORM (xing) of the pulse, level of depth and width**
4. **DYNAMIC (shi), the strength of the pulse on arrival and departure.**

There are far too many variables, time of day, season, gender etc. that can affect the most subtle readings of the pulse so that even with the best practitioners diagnosis from the pulse alone is estimated to achieve at best only 39% reliability.

Nan Jing (Classic for Acupuncture) describes palpating 5 depths.

There are variables in terms of the position of the organs or if the pulse even reflects the 13 TCM organs.

First, identify the overall basic quality - which is the most important diagnosis
Second, notice any unusual regarding the 13 positions and any other traditional pulse systems.

ALWAYS KEEP IN MIND THAT:

The pulse is only part of a comprehensive TCM Differential Diagnostic Evaluation

And can at least be used to further confirm an assessment that is nearly complete.

Pulse in Relation to Patterns and Herbal Treatments.

The most important application of the pulse that is most practically useful is application to TCM diagnostic patterns.

As opposed to:
Arthritic pains caused by excess heat stagnation - faster pulse indicating the use of anti-rheumatic herbs that are primarily anti-inflammatory such as turmeric, echinacea, Devil's claw and red clover blossoms.

Arthritic pains aggravated by cold and dampens require the use of anti-rheumatic herbs that are warmer and circulating such as sassafras, angelica and cinnamon twigs.

Classical Herbal Formula usually indicate a basic pulse quality associated for its use.

What are we feeling?

Another perspective on the Physiology of the Pulse

1. **Arterial pressure: wiry, tight, hollow, soft, leather of drumskin, scattered**
   Arterial Wall Tension: The wall of the artery has a degree of tension which can be assessed.

   When it is abnormal there are 3 possible causes:
   1. **blockage or obstruction of Qi and/or blood**
   2. **an underlying lack of Yin fluids**
   3. **neurological tension on the arterial wall**

2. **East of Occlusion: determines overall force and volume of Yin fluids, determined when we press more firmly in an attempt to stop the pulse.**

3. **Force - replete (strong), Firm, Weak, Empty, Soggy and Faint pulses.**

4. **Flow wave and pulse contour - rough, surging or stirring**

When taking the pulse, it may help to envision that what we are assessing is:

1. **Force of the impulse caused by the heart pushing the blood through the arteries which indicates Qi.**
2. **The peristaltic action of the nerves on the artery as it expands and closes around each pulse impulse. When it is wiry it indicates greater spasmodic tension which indicates Liver wind.**
3. **Whether the blood is sufficient to fill the artery which indicates Blood.**
4. **Blood viscosity (dampness).**

Problems and hints on how to learn the pulse qualities:

Learn to recognize the 28 basic individual pulses first before learning their meaning.

Usually the pulses appear in combination. However begin by getting an overall feeling of the quality - big, slippery, wiry, thready, rapid, intermittent, choppy.

Find someone you know is sick with a particular condition and see what their pulse is.
Pregnant women will always have a slippery pulse.
Floating pulse happens when a person has a cold, fever
Thready will happen if anemic
Wiry feels like putting your finger on a guitar string. Anxiety, depression, moodiness which indicates liver stagnation.

Kidney yin is felt in the 3rd position on the left wrist

Kidney yang is felt in the 3rd position on the right wrist

Humors are fluids, blood, hormones etc.

Pulse Rate Assessment

Rate assessment is a measure to determine heat or cold. In the normal person, contemporary rates are:

60 BPM or less is slow and signifies coldness or low metabolism. The exception is an athletic pulse which is usually slow and would be normal.

80 to 90 BPM or higher is a fast pulse rate and this signifies heat, possibly some hyper metabolic function, inflammation etc.

Methods for evaluating pulse rate:

Contemporary method:
You would need a reliable timepiece with a second hand. Count the number of beats per 30 seconds and multiply by 2 to get BPM. Some may count only for 15 seconds and then multiply by four.

Traditional Respiration Method:
On average, during one exhalation there should be two pulse movements.

During one inhalation there should be 2 pulse movements so that 4 pulse movements per one complete respiratory cycle is normal.

Thus 3 or less is slow, while 5 or more is fast.

What Are We Feeling:

1. **Location:**
   - **a. floating or superficial**
   - **b. hollow**
   - **c. soft**
   - **d. leathery**
   - **e. sinking or deep**
   - **f. latent**
   - **g. firm or prison**

2. **Rate**
   - **a. slow**
   - **b. leisurely**
   - **c. rapid**
   - **e. swift or hasty**
   - **f. moving or agitated.**

3. **Rhythm**
   - **a. leisure**
   - **b. knotted (regularly irregular)**
   - **c. intermittent (irregularly regular)**
   - **d. hasty or accelerated**
   - **d. choppy (uneven)**

4. **Strength**
   - **a. weak**
   - **b. excess**
   - **c. flooding**
   - **d. diminutive or minute**

5. Form

a. large
b. flooding
c. scattered
d. long
e. short
f. wiry
g. thin or thready

Basic Objective Parameters of Pulse taking

1. Speed, also known as frequency, or tempo

Normal is 70 BPM
Fast is 80 BPM or higher means Heat
Slower than 70 BPM and even below 60 BPM indicates coldness of hypoactivity
Cold and phlegmatic is slow and deep
Exceptionally fit, occurs with aerobically trained hyper-efficient hearts can have a slow pulse

2. Force, also known as strength or pressure

Means strength of Qi and overall vitality and energy level.
The stronger the pulse the more energy, the weaker it is, the more devitalized.
An Extreme forceful pulse feels like it is bursting and indicates congestion or excess.
A healthy pulse will have all organs relatively equal and balanced in strength.

3. Depth, or level at which the pulse prevails.

Superficial with light or no pressure is called Floating. It indicates a superficial disease, cold, flu, fever. If superficial and rapid, it means Heat. If superficial and slow, means external cold.

A pulse only felt at the deep level indicates a chronic disease.

A prominent pulse is felt mostly on the surface but with good underlying strength and vitality. Means good vitality.

Rootless pulse is only felt at the superficial and middle levels but disappears at the deep level indicates weakness or deficiency of the deep organs especially the Kidney-adrenals.

A healthy pulse is mostly felt at the moderate level but superficial and deep levels as well.

4. Width, or breadth, also known as volume.

Width refers to the volume or breadth of the pulse. Is the pulse fat or skinny? Does it feel like a fine thread or thick rope?

Thin or 'thready' pulse - blood deficiency

A full and large pulse - fullness and excess

The thinner the pulse the greater the deficiency, the thicker the pulse, the greater the fullness or excess.

A healthy pulse is moderate in width and breadth.

5. Definition, also known as contour, or discreteness.

Dryness creates a clear, stark outline of the pulse.

Softness or fuzziness indicates moisture or wetness.

Hard vs. soft: hardness indicates dryness. Softness indicates moisture. Atherosclerotic often has hard artery walls.

Soggy pulse feels like an overcooked noodle. It means lack of tone and consolidation of Qi with excess dampness and revitalization in the digestive system.

A healthy pulse should be crisp and defined, but with soft, suppleness.

6. Quality of Expansion, or rise / systole / pulsation.

The quality of the rise, or pulsation of the artery.

Consider how long each pulsation lasts, how does it rise and fall.

Are both the rising and falling discrete and perceptible?

Does one predominate over the other?

Expansion of pulsation is the key factor in determining the pulse gait.

7. Quality of Interlude between Pulsations.

How long is the gap between pulsations relative to the duration of the pulsations themselves?

Can the pulse still be felt, and maintain some perceptible level of pressure and contour between pulsations, or does it seem to completely disappear.

A pulse that is too weak or scattered in between pulsations can indicate systemic devitalization and insufficient consolidation of the Qi.

8. Rhythm, cadence, or Gait.

Pulse gaits are often described in terms of natural phenomena:
Examples:
Waves breaking on a beach
The hollow stalk of an onion
Leaping gazelle
Crawling ants

9. Pulse Regularity.

Regularity is an important factor in the pulse, as irregularities can point to weaknesses or heart dysfunctions whose contractions generate the pulse.

Many heart weaknesses can be chronic or relatively mild in nature and don't necessarily indicate an imminent acute cardiac crisis or major arrhythmia. However when a weak heart is assessed, it indicates the use of the right tonics.

Irregularities are different types and degrees indicating varying levels of seriousness and severity:
Three basic forms: 1. speed 1. rhythm and 3. skipped or missed beats.
of these, the last is most serious and the first is least serious.

Are they regularly irregular or irregularly irregular? Random irregularities are more serious than regular ones.

The more frequent irregularities, those of frequent, random, missed beats are the most serious.

Irregularity of pulse consists of occasional or alternating weak beats interspersed

amongst normal ones.

Irregularity of speed or rhythm consists of periodic slowdowns and speedups of the pulse rate or occasional hesitant or hasty beats.

Episodes of a Racing Pulse are commonly associated with heart palpitations.

10. Pulse Tension.

This refers to the relative degree of tautness or laxness in the pulse. A healthy pulse should have sufficient relaxation and suppleness without being too lax. Excessive tension in the pulse is more problematic than excessive laxness.

A tense or wiry pulse, also called a twisted or cordlike pulse in Unani Medicine, feels like a taut violin string or bow string. It is associated either with chronic pain or emotional/psychosomatic stress or tension; or, it indicates Melancholic conditions of liver congestion and stagnation, portal hypertension or gastrointestinal colic. A tense pulse can also indicate arterial hypertension.

Pulse length is closely associated with pulse tension, because a tense pulse is often long, being palpable even beyond the Cubit and Carpal positions. If the pulse is long, but also supple and relaxed, however, this is not particularly pathological or abnormal.

A short pulse is usually felt in one position opnly, which is usually, but not always, the Median position. If the pulse is detectable at all, it can usually be felt in the Median position. A Short pulse denotes a deficiency of the Vital force.

Pulse and Temperament

Hot Temperament = prominent, forceful, bounding (acute disease)

Cold Temperament = slow pulse (chronic disease), can be sinking or deep and cold, lack energy, can constrict the pulse (tense pulse)

Wet temperament = soft or soggy pulse. A full pulse can be wet or most and means excess. Slippery pulse means dampness or phlegm.

Dry temperament = clearly defined, crisp, hard or firm. A thin pulse is also dry and means deficiency of humours. Rough pulse is also dry and is opposite that of the slippery pulse. Choppy pulse is rough and abrupt, uneven in impulse and means blood deficiency or stagnation.

Sanguine (warm and moist) = moderate speed to slightly rapid, moderately soft and relaxed with good vitality.

Choleric (Hot and Dry): rapid, forceful and clearly defined

Melancholic (Cold and Dry): slow or weak, tense, constricted, thin and clearly defined

Phlegmatic (Codl and Wet): deep, slow and soft

AYURVEDIC PULSE used to determine basic pulse gaits for the different prakrito or constitutional types. These are equivalent in Greek and Unani medicine.

VATA PULSE

Slithers like a Snake. In Greek medicine it denotes a melancholic temperament. It is most found in the Carpal position. It is firm, clearly defined and often thin, indicating dryness. It also tends to be fast but more from an excess of nervous energy. It is also weak.

PITTA PULSE

Jumps like a Frog. Sometimes denotes choleric temperament. If is forceful and bounding. May be slightly rapid but not, paradoxically, as the melancholic-serpentine pulse. This pulse is most commonly found in the median position.

KAPHA PULSE

Glides like a Swan. In Greek medicine it denotes a phlegmatic temperament. It is slow, soft an deep. It is most prominently felt in the cubit position, where the increased depth and thickness of the flesh covering the radial artery favors the qualities of depth and softness.
The Sanguine temperament is moderate in all respects. Recently compared to a dolphin.

OTHER IMPORTANT PULSE GAITS

Empty Pulse = big in width, lacks strength and forcefulness. Felt superficially and slower than normal. It denotes Blood and Vital Force deficiency.

Hollow Pulse = feels empty, hollow, like an onion stalk and can be folled beneath the fingers. It is seen after a extreme loss of blood which can no longer fill the artery.

Flooding pulse = surges like a wave breaking upon the shore, quite bit and strong, but falls with less force. It denotes heat that has injured the Phlegmatic humour, serous fluids and radical moisture. A waving pulse can indicate a weakness of the Vital Force, possibly a healing crisis.

Disappearing Pulse = is one that rise up clearly and then disappears after reaching the top of the pulsation; its are felt, but its falls are absent. The outlines of the pulse can also be a little rough and diffuse. It indicates critical deficiency of both Blood and Vital Force and is seen in extreme exhaustion, or after feats or severe physical exertion.

Unani Pulse is called the Gazelle pulse. Leaps like a gazelle and glides and trails off. It indicates heat and fever, possibly pericarditis.

Hurried Pulse = is slightly rapid and intermittent, occsionally skipping beats at irregular intervals. It indicates heat agitating both the Blood and Vital Force.

Minute Pulse = is both weak, thin and nebulous contour, being indistinct and barely perceptible. It indicates extreme weakness, devitalization and deficiency.

Scattered Pulse = is like an empty pulse because it is big or wide, superficial and weak. However its contour is fuzzy, scattered and diffuse, falls or recedes much more strongly than it rises. It indicates Extreme adrenal exhaustion.

Anti-like or Formicant Pulse = feels like a line or swarm of ants crawling up a tree, and is extremely feeble, scattered and diffuse. It indicates extreme exhaustion, depletion of vital force.