

Perception And Accessibility of Pulse in Daily Medical Practice

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Key Points

- Pulse; as accessible tool of diagnosis
- Examination of Pulse
- Factors affecting pulse
- Parameters for detecting the pulse
- The eighteen pulses about the state of respective organ

Introduction:

A pain may persist after the pain has gone; these words credited to Avicenna. Without the great medics of the Muslim world, medicine would probably at the dark ages, inadequately studied.¹ According to Avicenna every beat of pulse consists of two movements and two pauses; expansion: pause: contraction: pause.² In today's medicine ultrasound and imaging are predominant features. Consequently palpation of the pulse become something like a relic from the past, rather to make it habitual and use in terms of skill and professional development. But medical history tells different story of pulse perception as it is highly desirable as a tool with sense and simplicity, as an inexpensive and accessible instrument with a considerable diagnostic yield.³

Examination:

According to the definition, "Pulse" is basically the movement of vessels. Having four parts: Two movements and two pauses. The first one is the expansion movement and the second one is the pause, which is the rest phase in between expansion and contraction. The third one is contraction movement and the fourth one is again pause after the contraction movement.

For the best way to examine the pulse, three fingers should be placed, excepting the thumb. Pulse (as a

regular beat can be felt as heart pumps blood around the body) is easily examined by touching the patient's by touching the patient's wrist.

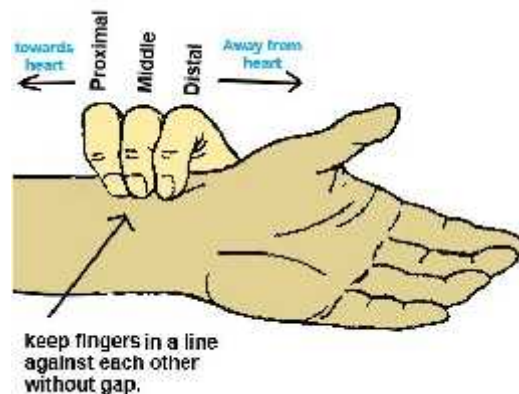


Fig1: Method of Examination

Source: medicosage.com

Some factors effect the accuracy of pulse examination, which is the increased pulse width and height, when the patient's forearm is near and vertical to body. Pulse examination can be affected by emotional or physical stress of healthy person. Both empty and full stomach can influence the examination. Furthermore, results of pulse examination of a patient under imbalanced

temperament should be checked with the results derived when the patient is in a healthy situation.

Pulse detection is based on expansion degree, impact of pulse beat on fingers, duration of movements, structure of artery, emptiness or fullness of artery, hotness or coldness of pulse feeling, duration of rest period, similarity or dissimilarity of pulse and finally pulse rhythm. Expansion movements can easily be felt, but the contraction movement is too difficult to distinguish. So, most of the pulse signs can be determined in expansion movement.

According to *Ibn Sina's* reports, 10 parameters are useful for detecting the pulse namely size, fastness or slowness, strength or weakness, shortness or length of pulse intervals, softness or hardness, similarity or dissimilarity, regularity or irregularity in diverse pulses and harmony related to musical nature of the pulse. The description of these parameters is represented in Table 1. The combination of two or more of these parameters results in compound pulses. Thirteen different compound pulses, such as massive pulse, deer pulse, wavy pulse, vermicular pulse and serrate pulse have been mentioned by *Ibn Sina*.⁴

Table 1 The description of important pulse parameters

Parameters	Description	Correspondence
Parameter 1	The distance between two consecutive beats with the width of the pulse	Long pulse (wide & long) Obdurate pulse (narrow) Autumn pulse (wide & long) Spring pulse (wide & long) Summer pulse (wide & long) Winter pulse (wide & long) Summer pulse (wide & long) Winter pulse (wide & long)
Parameter 2	Regularity or irregularity of the pulse (frequency of beats)	Regular pulse (normal) Irregular pulse (abnormal) Irregular pulse (abnormal) Irregular pulse (abnormal) Irregular pulse (abnormal) Irregular pulse (abnormal) Irregular pulse (abnormal) Irregular pulse (abnormal)
Parameter 3	The strength and hardness of the pulse (frequency of beats)	Strong pulse (wide & long) Weak pulse (wide & long) Autumn pulse (wide & long) Spring pulse (wide & long) Summer pulse (wide & long) Winter pulse (wide & long) Summer pulse (wide & long) Winter pulse (wide & long)
Parameter 4	The contracting or the relaxing of the movement (beat) of the pulse (frequency of beats)	Contracting pulse (wide & long) Relaxing pulse (wide & long) Contracting pulse (wide & long) Relaxing pulse (wide & long) Contracting pulse (wide & long) Relaxing pulse (wide & long) Contracting pulse (wide & long) Relaxing pulse (wide & long)
Parameter 5	Actual contraction and relaxation of the artery	Actual contraction (wide & long) Actual relaxation (wide & long) Actual contraction (wide & long) Actual relaxation (wide & long) Actual contraction (wide & long) Actual relaxation (wide & long) Actual contraction (wide & long) Actual relaxation (wide & long)
Parameter 6	Actual contraction and relaxation of the artery	Actual contraction (wide & long) Actual relaxation (wide & long) Actual contraction (wide & long) Actual relaxation (wide & long) Actual contraction (wide & long) Actual relaxation (wide & long) Actual contraction (wide & long) Actual relaxation (wide & long)
Parameter 7	Actual contraction and relaxation of the artery	Actual contraction (wide & long) Actual relaxation (wide & long) Actual contraction (wide & long) Actual relaxation (wide & long) Actual contraction (wide & long) Actual relaxation (wide & long) Actual contraction (wide & long) Actual relaxation (wide & long)
Parameter 8	Actual contraction and relaxation of the artery	Actual contraction (wide & long) Actual relaxation (wide & long) Actual contraction (wide & long) Actual relaxation (wide & long) Actual contraction (wide & long) Actual relaxation (wide & long) Actual contraction (wide & long) Actual relaxation (wide & long)
Parameter 9	Actual contraction and relaxation of the artery	Actual contraction (wide & long) Actual relaxation (wide & long) Actual contraction (wide & long) Actual relaxation (wide & long) Actual contraction (wide & long) Actual relaxation (wide & long) Actual contraction (wide & long) Actual relaxation (wide & long)
Parameter 10	Actual contraction and relaxation of the artery	Actual contraction (wide & long) Actual relaxation (wide & long) Actual contraction (wide & long) Actual relaxation (wide & long) Actual contraction (wide & long) Actual relaxation (wide & long) Actual contraction (wide & long) Actual relaxation (wide & long)

Source: heartviews.org

The eighteen Pulses

There are nine different pulses on each wrist, giving a total of eighteen. The physician will use three fingers, carefully putting each on top of a different pulse. There are three levels to the pulse at each position, giving a total of nine pulses.

Each of eighteen pulses is related to specific internal organ and gives detailed information about the state of that organ. Furthermore, there are 28 pulse qualities such as the Slippery Pulse, which indicates the presence of Dampness, or the Tight Pulse, which appears when there is obstruction. Any of the pulse qualities can be found at any of pulse positions and each signifies a different condition.

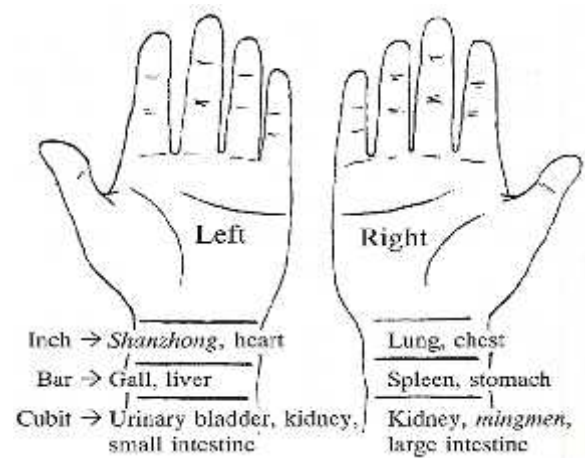


Fig2.Pulse taking

Source: <http://www.acupuncture-and-chinese-medicine.com/feel-the-pulse.html>

Adding both wrists together make a total of eighteen pulses. Each area is linked to an organ. Heart refers to organs and functions above diaphragm (especially left side); Liver to those between diaphragm and navel (especially lateral areas); Kidney to those below navel (especially lower left). Lung associates with organs and functions above diaphragm (especially right side); Spleen with those between diaphragm and navel (especially central); Kidney with those below navel (especially lower right).⁵

References:

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4. Zarshenas MM, Abolhassanzadeh Z, Faridi P, Mohagheghzadeh A. Sphygmology of ibn sina, a message for future. *Heart views: the official journal of the Gulf Heart Association*. 2013 Jul;14(3):155.
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