

Part 1

ZANG ORGANS

Zàng (臟) organs include the Heart, Lung, Spleen, Liver, and Kidney. These yin organs produce, transform, regulate, and store fundamental substances such as qi, blood, essence, and body fluids. They are solid organs that do not have empty cavities. Based on the physiological function and anatomical structure of *zàng* organs, their pathological changes are mostly due to an insufficiency in producing and storing, which more often results in deficiency patterns.

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Chapter 1

Heart Disease Patterns

Physiological characteristics and functions of the Heart

The Heart is located in the middle of the chest, where it is protected by the Pericardium. The Heart channel emerges from the axilla and continues through the medial side of the arm into the palm. It is internally-externally connected with the Small Intestine, opens into the tongue, and manifests on the face. The fluid of the Heart is sweat and its related emotion is joy.

The Heart is called the sovereign organ (君主之官 *jūn zhǔ zhī guān*) and the root of life (生命之本 *shēng mìng zhī běn*), and is in charge of spirit and vitality. It is the sun within the yang organs, responsible for the blood circulation of the entire body as well as for mental activities. The Heart is a fire organ, the storage place for sovereign fire (君火 *jūn huǒ*), and governs yang qi. It is associated with the summer season.

The nature of the Heart is inward and conservative, favoring calm and quiet while disfavoring heat. So, when pathogenic heat attacks the body, it tends to cause Heart dysfunction.

Heart	Relationship
Spirit	Consciousness, the mind/spirit (神 <i>shén</i>)
Internal-external connection	Small Intestine
Open orifice	Tongue
Controls	Blood
External manifestation	Face
Fluid	Sweat
Fire	Sovereign fire
Emotion	Joy
Season	Summer
Five phase	Fire
Six climate factor	Fire

Table 1.1 Heart and its related properties

1 | Governs blood and controls blood vessels

The Heart is responsible for:

- (1) Promoting blood circulation. Heart qi is the motive force that keeps blood circulating inside vessels continuously.
- (2) Generating blood. Heart fire transforms body fluids into blood and sends it into the vessels.
- (3) Keeping blood vessels elastic and smooth.

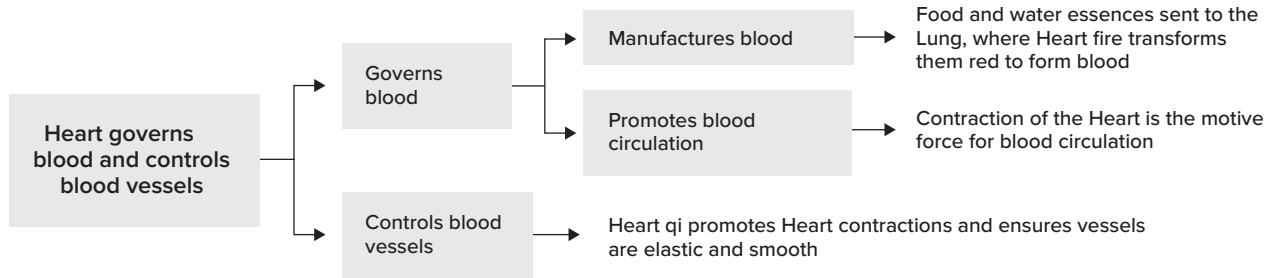


Chart 1.1 Heart governs blood and vessels

2 | Houses the shén

The Heart is the center for consciousness and vitality, influencing both mental and physical activities.

- (1) The Heart governs blood, which nourishes *shén*; blood is the fundamental material for physical and mental activities.
- (2) The Heart accepts external stimuli and has correct response capabilities. *Spiritual Pivot*, Chapter 8 (靈樞, 本神 *líng shū, běn shén*) states:

The Heart is responsible for all kinds of mental activities, which are caused by external stimuli. When the Heart has memory and retains information, it is called thought or intention (意 *yì*). When thought or intention exists, then willpower and determination (志 *zhì*) develops.

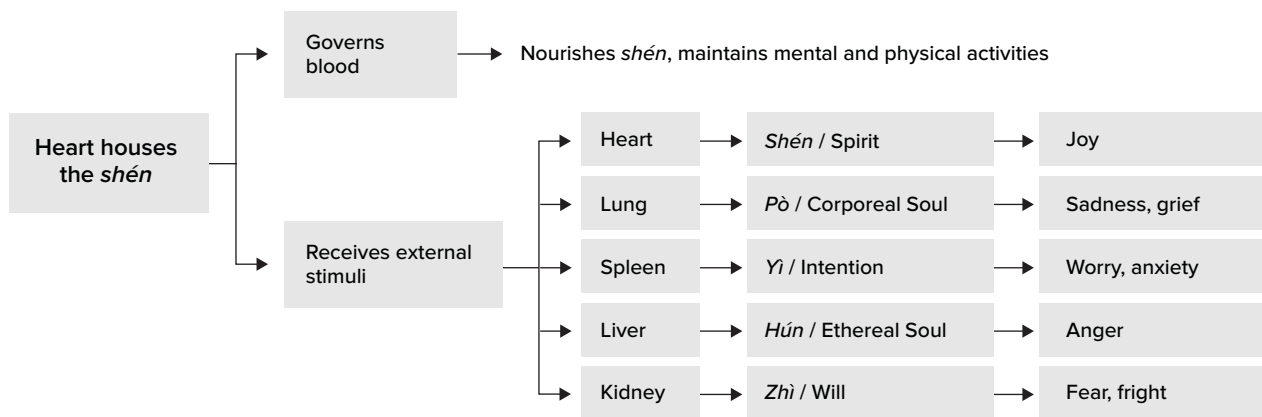


Chart 1.2 Heart houses the shén

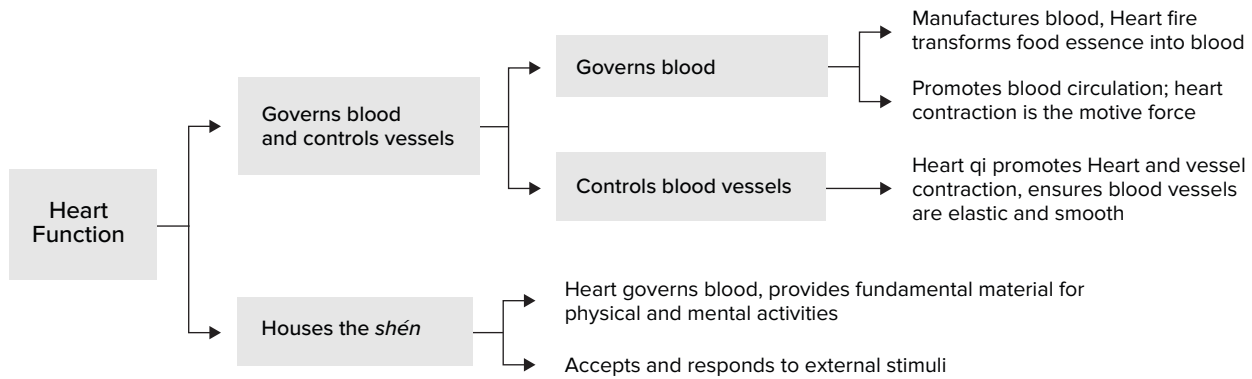


Chart 1.3 Heart function summary

Common etiological factors in Heart patterns

Heart patterns are mainly caused by endopathogenic factors, but exopathogens can also attack the Heart directly. The following are common etiological factors for Heart disease patterns:

- (1) Congenital weakness
- (2) Chronic illness with improper care leading to internal *zàng fǔ* organs deficiency
- (3) Emotional stress: excessive anxiety and worry damaging Heart and Spleen
- (4) Exopathogenic heat or cold directly attacking the Heart
- (5) Improper diet creating phlegm or malnutrition leading to qi and blood deficiency or stagnation

Pathological changes and major clinical manifestations of Heart disease

Pathological changes of the Heart are mostly due to its failure to govern blood, control blood vessels, and house the *shén*. There are four major clinical manifestations of Heart dysfunction: palpitations, sleep disorder, mental disorder, and chest distress or pain.

1 | Palpitations

Definition: Refers to a sensation of the heart beating that is felt in the chest by the patient. It is caused by either an increase in heart rate, an increase in heart contraction, or by irregular heartbeats. It is often present in various kinds of coronary heart disease, cardioneurosis, anemia, and hyperthyroidism. Palpitations can also arise in a healthy person during periods of exercise or emotional excitement. Depending on its severity, palpitations can be divided into the following categories:

- **Fright palpitations** (驚悸 *jīng jì*): refers to heart palpitations that occur when there is fright. It is usually due to some external cause. They come and go quickly and are of short duration. This condition is mild and patients do not usually seek treatment for fright palpitations.

- **Continuous palpitations** (怔忡 *zhēng chōng*): refers to severe throbbing of the heart, which is often felt from the chest down to the umbilicus. It is a progression of fright palpitations, usually due to internal causes, and is induced or aggravated by exertion. Prolonged duration of this condition is severe and may require medical attention.

Etiology and pathomechanisms: Palpitations appear in all Heart patterns and are directly related to the condition of the Heart. Under normal conditions, the motive force of the Heart keeps the organ pumping regularly, ensuring smooth blood circulation. The *shén* resides in the Heart and is nourished by blood, qi, essence, and body fluids.

When the Heart is attacked by pathogenic factors, emotional stress, or trauma resulting in phlegm or blood stasis, or when the Heart is deprived of nourishment due to a deficiency of qi, blood, yin, or yang from improper diet, chronic illness, or a weak constitution, then the motive force becomes insufficient and the Heart cannot keep blood circulation smooth. The *shén* will be disturbed and restless, causing fright palpitations.

Continuous palpitations represent an exacerbation of fright palpitations and is viewed as damage to the Heart organ rather than a functional pathology. Thus the lack of the Heart's motive force and *shén* disturbance are the pathomechanisms of palpitations.

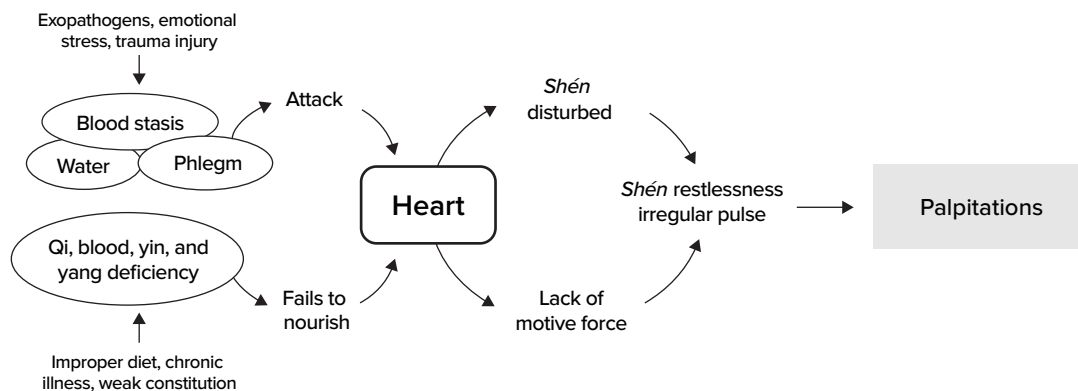


Chart 1.4 Etiology and pathomechanism of palpitations

2 | Insomnia

Definition: A sleep disorder that may involve a lack of sleep, sleepiness, oversleeping or sleeping at inappropriate times. Insomnia describes a variety of symptoms associated with sleep disturbance, which include:

- difficulty falling asleep after retiring to bed
- early awakening
- intermittent waking through the period of attempted sleep
- inability to sleep through the night, restlessness at night
- dream-disturbed sleep

Etiology and pathomechanisms: The Heart is the major organ directly related to sleep. The Heart houses the *shén*, which is responsible for both the body's external manifestation of vitality as well as the internal conscious and subconscious mental activity. During the daytime, the yang qi is abundant and the *shén* is active towards the outside of the body. When yang qi increases in the mornings, one will therefore awaken and become active.

The yin governs the nighttime when the *shén* that was active on the outside during the day moves inwards to be stored in the Heart. If Heart and *shén* remain peaceful and calm, there will be sleep. Heart qi and yang promote the activities of the *shén*, while Heart blood and yin are the substances that nourish the *shén*. Thus changes to the Heart qi, blood, yin, and yang will affect the Heart *shén*.

The two pathomechanisms of insomnia are: pathogenic factors (especially heat) disturbing the *shén* and a loss of nourishment to the Heart. Pathogenic heat can cause the *shén* to lose its anchor in the Heart at night and become restless. This can be the heat of an exopathogenic factor or heat that arises from an endopathogenic factor such as stagnation or deficiency of vital substances. These patterns are often found in old age, chronic illness, or the later stages of a febrile disease.

Loss of nourishment may be attributed to either excess or deficiency. In the case of excess, the stagnation of qi, blood, phlegm, or food can block the flow of qi and blood to the Heart, leading to a shortage of the vital substances necessary for the nourishment of the *shén*. Such stagnation can occur because of emotional stress, traumatic injury, or improper diet. As for deficiency, the lack of qi, blood, yin, or essence cannot sufficiently nourish the Heart, and therefore cannot anchor the *shén*.

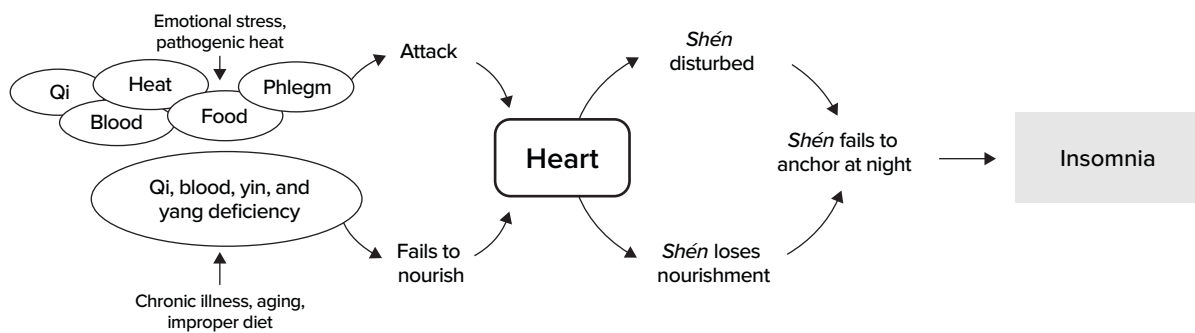


Chart 1.5 Etiology and pathomechanism of insomnia

3 | *Shén* disturbance

Definition: *Shén* disturbance means that consciousness is obscured or lost, manifesting with abnormal mental behaviors. This condition is usually found in one of the following patterns, each caused by unique etiologies and pathogenesis:

- irritability and restlessness (煩躁 *fán zào*)
- restless organ disorder (臟躁 *zàng zào*)
- hysteria (百合病 *bǎi hé bìng*)
- yin madness (癡 *diān*)
- yang madness (狂 *kuáng*)
- epilepsy (癇 *xián*)

Etiology and pathomechanisms: Under normal circumstances, *shén* is housed in the Heart and nourished by the blood. At nighttime, *shén* anchors in the Heart and the person falls asleep. In the daytime, when a person wakes up, the *shén* will move out of the Heart through the Heart orifice and perform all conscious and subconscious activities, such as thinking, memory, behavior, and speech.

There are two major reasons for *shén* disturbance. One is due to the attack by pathogenic factors, especially heat and phlegm. Pathogenic heat disturbs the *shén*, causes it to be unsettled and leads to restlessness, irritability, vexation, incoherent speech, or manic behaviors. When pathogenic heat pushes *shén* out of the Heart, coma and unconsciousness may result. Phlegm can also obstruct the Heart orifice, inhibiting the *shén* from performing mental activities, resulting in chronic depression, madness, laughing or crying inappropriately, or even loss of consciousness and delirium.

Pathogenic heat is usually caused by external heat attack, febrile disease, or emotional stress, but can also result from a disorder of the internal organs. Phlegm can be generated by improper diet, long-term emotional stress, and a disorder of the internal organs.

The second reason for *shén* disturbance is qi, blood, yin, yang, and essence insufficiency. The *shén* requires these nutritional substances to maintain normal function. When nutritional substances are insufficient due to chronic illness, aging, or improper diet the *shén* will not be able to function, resulting in mental depression, possible hallucinations, disorientation, frequent attacks of melancholy, soliloquies (獨語 *dú yǔ*), paraphasia (錯語 *cuò yǔ*), and poor memory.

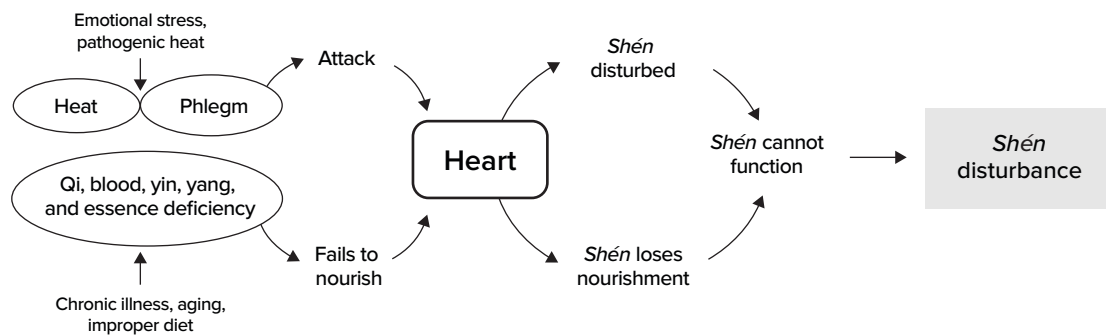


Chart 1.6 Etiology and pathomechanism of *shén* disturbance

4 | Chest distress or pain

Definition: A sensation of pain, oppression, discomfort, and stifling in the chest.

Etiology and pathomechanisms: Stagnation in the chest can cause chest distress or pain, such as when pathogenic cold attacks the Heart, leading to an obstruction of vessels. *Zàng fǔ* organ dysfunction caused by emotional stress, improper diet, or trauma injury can also lead to phlegm, blood stasis, or qi stagnation. Improper diet, chronic illness, or a weak constitution can lead to qi deficiency. When qi is deficient, there is not enough power to circulate the qi and blood, resulting in stagnation.

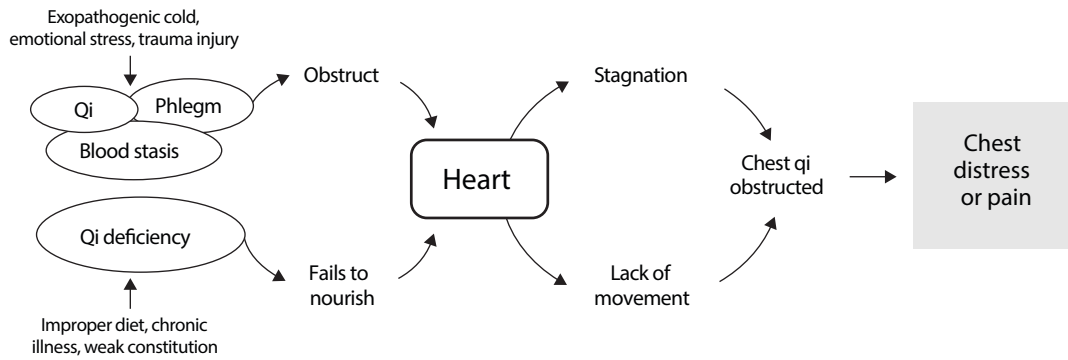


Chart 1.7 Etiology and pathomechanism of chest distress or pain

5 | Other signs and symptoms related with the Heart

The following signs and symptoms can also appear in Heart patterns: canker sores, pale or dark facial complexion, poor memory, tongue ulcers, knotted, abrupt, or intermittent pulse, excessive sweating, red tongue tip or crimson tongue, and yellow urine with burning and painful sensation.

Physiological Function	Pathological Change	Clinical Manifestation
Governs blood and controls the blood vessels	Qi and blood circulation obstruction	Fright or continuous palpitations, shortness of breath, chest tightness and pain, irregular pulse
	Pathogenic heat disturbs blood	Vomiting blood, nosebleed, blood in the urine, bruising
	Blood deficiency, unable to nourish the Heart	Palpitations, dizziness
Houses the <i>shén</i>	Blood deficiency, unable to nourish the <i>shén</i>	Insomnia, dream-disturbed sleep, poor memory, depression
	Heat disturbs the <i>shén</i>	Irritability, mania, delirium, coma
Opens to the tongue	Excess heat	Red prickles on tongue tip or ulcers
	Blood stagnation	Purple or dusky (pale purple) tongue or dark spots on tongue
	Pathogens obstructing tongue channels and collaterals	Stiffness of tongue, flaccid tongue, difficult speech, or inability to speak
Manifests in the complexion	Qi, blood, or yang deficiency	Pale face
	Blood stagnation	Dark or purple complexion
Related to the Small Intestine	Heart fire transmits to the Small Intestine	Frequent, scanty, and dark yellow urine with painful and burning sensation

Table 1.2 Physiological functions, pathological changes, and clinical manifestations of the Heart

Common patterns in Heart disease

There are nine different Heart patterns commonly seen in the clinic and they can be divided into two categories:

(1) Deficiency patterns: Heart qi deficiency, Heart yang deficiency, which can develop into Heart yang collapse, Heart blood deficiency, and Heart yin deficiency

(2) Excess patterns: Phlegm misting the Heart, phlegm-fire harassing the Heart, Heart fire blazing, and Heart vessels obstruction, which, depending on the etiology and pathogenesis, can be subdivided into phlegm obstruction of the Heart vessels, qi stagnation in the Heart vessels, blood stasis obstruction of the Heart vessels, and excess cold obstruction of the Heart vessels.

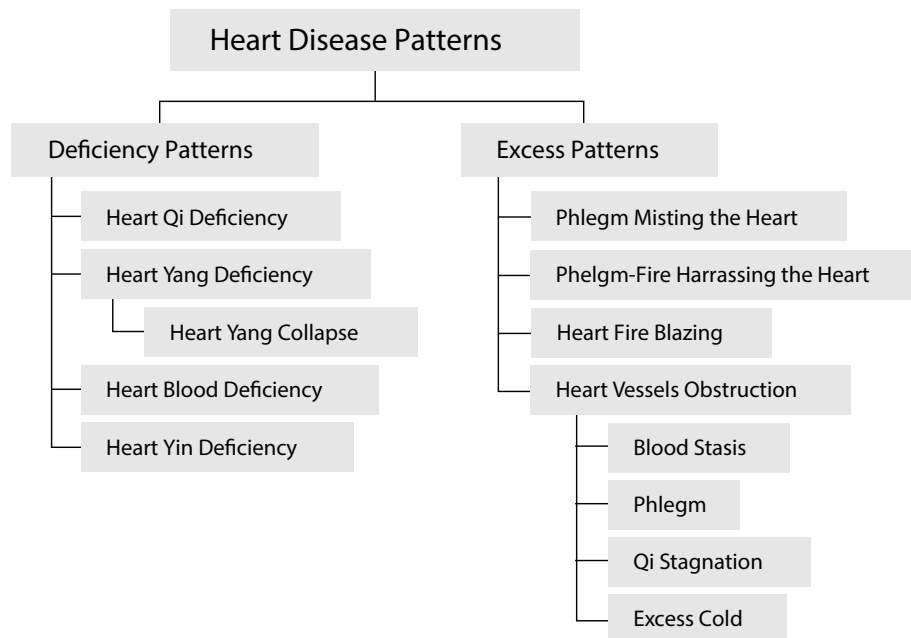


Chart 1.8 Common Heart disease patterns

	Etiology	Patterns
Deficiency	Emotional stress, over-worrying and -thinking, congenital insufficiency, or chronic illness impairs <i>zàng fū</i> organs	Heart Blood Deficiency, Heart Yin Deficiency, Heart Qi Deficiency, Heart Yang Deficiency, Heart Yang Collapse
Excess	Improper diet, emotional stress, chronic illness, pathogenic heat or cold attacking	Phlegm-Fire Harassing the Heart, Phlegm Misting the Heart, Heart Fire Blazing, Heart Vessels Obstruction

Table 1.3 Classification of common Heart patterns

1 Heart Qi Deficiency Pattern | 心氣虛証 |

Definition: A group of signs and symptoms caused by a weakness of motive force, which slows blood circulation, resulting in the Heart losing nourishment.

Clinical manifestations: Fright or continuous palpitations, chest tightness, shortness of breath that worsens with exertion, fatigue, pale face, spontaneous sweating, pale tongue with white coating, weak pulse, rapid pulse without strength, knotted pulse, or abrupt pulse.

Key points: Fright or continuous palpitations, chest distress, plus qi deficiency signs and symptoms.

Etiology and pathogenesis: This pattern is most closely related to chronic illness, improper diet leading to malnutrition, congenital weakness, or aging. Qi deficiency can be caused by impaired body fluids or blood deficiency. It also can develop from long-term severe emotional stress such as overthinking and worrying.

The Heart qi provides the motive force for blood circulation, which involves proper heart muscle contractions for propelling the blood to flow smoothly through the vessels, thereby maintaining the normal physiological activities of all *zàng fǔ* organs and tissues. Thus when Heart qi is insufficient it cannot push blood to flow smoothly inside the vessels, resulting in palpitations and irregular pulses.

Weakness of the Heart’s motive force makes it difficult for the blood to flow upward and outward, causing a pale complexion, pale tongue, or weak pulse. The deficient qi is unable to flow adequately, so there can be shortness of breath along with chest tightness and distress. Sweat is the fluid of the Heart, and thus when deficient Heart qi fails to secure the body’s surface, the interstitial spaces (腠理 *còu lǐ*) loosen and leak body fluids, resulting in spontaneous sweating.

Physical activity consumes qi, therefore, in deficiency patterns, all of the above signs and symptoms are aggravated by exertion.

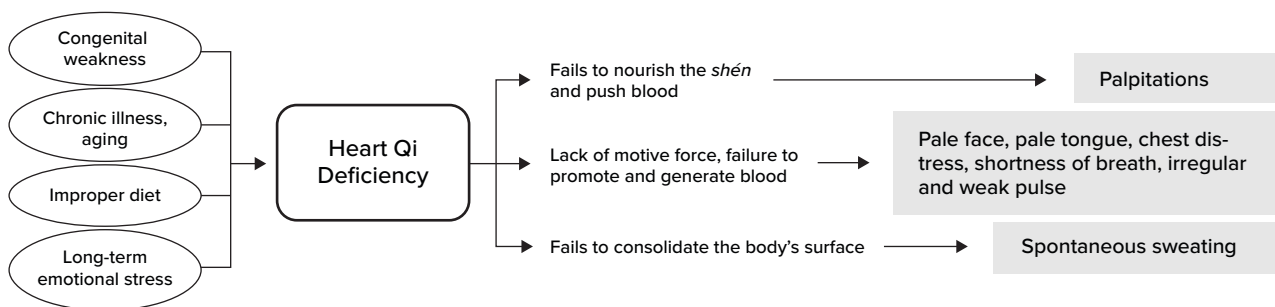


Chart 1.9 Etiology and pathogenesis of Heart Qi Deficiency

TCM Disease	Western Disease	Herbal Formulas	Acupuncture	
Palpitations (心悸)	Anemia, angina, coronary artery disease, arrhythmia, menopause syndrome, panic attack, anxiety	Si Jun Zi Tang, Huang Qi	HT-5, PC-6, BL-15, CV-6, CV-17, ST-36 HT-6, HT-7, HT-8, CV-14, BL-19	
Insomnia (失眠)	Neurosis, menopause syndrome, depression, anxiety	Bao Yuan Tang Gui Pi Tang		HT-7, SP-6, Anmian
Chest painful obstruction (胸痹)	MI, angina, CAD, cor pulmonale, myocarditis, pericarditis, pulmonary embolism	Sheng Mai San, Shen Fu Tang		HT-7, BL-44, CV-4, GV-20
Fatigue (虚劳)	Anemia, CHF, valvular heart disease, COPD, arrhythmia, Lyme disease, hypothyroidism, depression	Shen Mai San Si Jun Zi Tang		CV-3, CV-4, CV-5, CV-6, CV-12, BL-20, BL-23, GV-4
Forgetfulness (健忘)	Dementia, Alzheimer's, sleep apnea, depression, hypothyroidism, ADD/ADHD	Gui Pi Tang		BL-20, BL-23, KI-7, Sishengcong

Table 1.4 Diseases and treatments related to Heart Qi Deficiency

2 Heart Yang Deficiency Pattern | 心陽虛証 |

Definition: A group of signs and symptoms that are a result of Heart qi deficiency and weakness of motive force with internal pathogenic cold.

Clinical manifestations: Fright or continuous palpitations, chest distress with tightness or pain, intolerance to cold, cold limbs, shortness of breath, fatigue, spontaneous sweating, a pale face, a pale flabby tongue with moist white coating, and a pulse that is weak, minute, knotted, or deep without strength.

Key points: Fright or continuous palpitations, chest pain or distress, irregular pulse, plus yang deficiency signs and symptoms.

Etiology and pathogenesis: This pattern usually develops from Heart qi deficiency. When a patient suffers from Heart qi deficiency and does not receive proper treatment, Heart function continues to be impaired and eventually develops into yang deficiency.

When yang fails to warm and push the blood, the channels and vessels in the Heart become obstructed causing stagnation and chest distress with tightness or pain. In yang deficiency, the yang is unable to perform its warming function, causing cold limbs and intolerance of cold (畏寒 *wèi hán*). A slow pulse with a pale, flabby, and moist tongue are also the signs of yang deficiency.

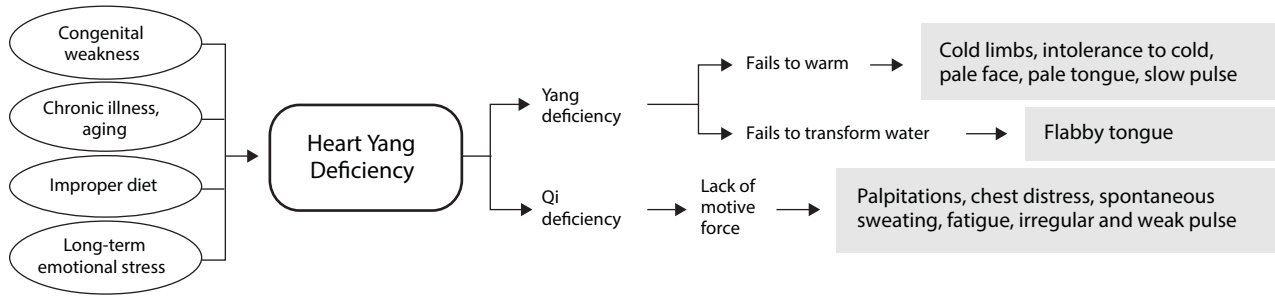


Chart 1.10 Etiology and pathogenesis of Heart Yang Deficiency

TCM Disease	Western Disease	Herbal Formulas		Acupuncture	
Palpitations (心悸)	Anemia, angina, coronary artery disease, arrhythmia, menopause syndrome, panic attack, anxiety	Shen Fu Tang, Bao Yuan Tang	Si Jun Zi Tang + Huang Qi	HT-5, PC-6, BL-15, CV-6, CV-17, GV-14	HT-6, HT-7, HT-8, CV-14, BL-19
Chest painful obstruction (胸痹)	MI, angina, CAD, cor-pulmonale, myocarditis, pericarditis, pulmonary embolism		Sheng Mai San + Shen Fu Tang		HT-7, BL-44, CV-4, GV-20
Fatigue (虚劳)	Anemia, CHF, valvular heart disease, COPD, arrhythmia, Lyme disease, hypothyroidism, depression		Sheng Mai San + Si Jun Zi Tang		CV-3, CV-4, CV-5, CV-6, CV-12, BL-20, BL-23, GV-4

Table 1.5 Diseases and treatments related to Heart Yang Deficiency

3 Heart Yang Collapse Pattern | 心陽暴脫証

Definition: A critical clinical condition due to extreme Heart yang deficiency, leading to the sudden collapse of Heart yang.

Clinical manifestations: Sudden start of severe palpitations; profuse cold, oily, pearl-like sweat; severely cold limbs; pale complexion; feeble breath; severe chest pain; cyanosis of the lips; minute, faint, or irregular pulse; or even a loss of consciousness and coma.

Key points: Sudden severe palpitations, profuse cold, oily, pearl-like sweat, plus Heart yang deficiency and yang collapse signs and symptoms.

Etiology and pathogenesis: This pattern usually develops from Heart yang deficiency, but can also be caused by excessive pathogenic cold damaging Heart yang or phlegm obstructing the Heart orifice.

When yang fails to secure the body’s surface, body fluids leak out, producing sweat that is oily, profuse, and cold. When yang fails to perform its warming function, the body and limbs become severely cold.

Gathering qi (宗氣 *zōng qì*) is in charge of breathing and is motivated by chest yang (胸陽 *xiōng yáng*). When yang fails, gathering qi leaks out and cannot assist the Lung, resulting in feeble breath. When Heart