

# Treatment of Obese Type 2 Diabetes Mellitus from Liver, Spleen and Kidney Based on the Theory of Huangdi Neijing

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**Abstract:** Obesity is an important risk factor for type 2 diabetes mellitus. Based on the theory of *The Yellow Emperor's Inner Classic*, this paper systematically reviews the traditional Chinese medicine etiology, pathogenesis, syndrome differentiation, and prevention strategies for obese type 2 diabetes mellitus. It is believed that the onset of this disease is centered on the dysfunction of the liver, spleen, and kidney, and is closely related to insufficient innate endowment, improper diet, and emotional dysregulation. Clinically, four common syndrome types are identified: spleen deficiency with phlegm-dampness, liver-stomach stagnation heat, phlegm-stasis intermingling, and spleen-kidney yang deficiency. The treatment should take soothing the liver, strengthening the spleen, and benefiting the kidney as the basic principles, with adjunct therapies of resolving phlegm, removing dampness, activating blood, and warming yang according to the syndrome. For prevention, the health-preserving concepts from *The Inner Classic*—"following nature, moderating food and drink, regular daily routine, and keeping the spirit within"—should be followed to provide comprehensive lifestyle intervention. This paper aims to further improve the TCM differentiation and treatment system for obese type 2 diabetes mellitus, and to provide a more comprehensive and systematic theoretical reference and practical approach for clinical prevention, treatment, and research.

**Keywords:** Huangdi Neijing; Liver, spleen, and kidney; Obesity; Type 2 diabetes mellitus; Prevention and treatment.

## 1. Introduction

Diabetes mellitus is a metabolic disease characterized by chronic hyperglycemia, caused by multiple factors such as genetics and environment [5]. With socioeconomic development and lifestyle changes, factors such as high-calorie diet, sedentary behavior, and increased mental stress have led to a continuously rising prevalence of obesity-related type 2 diabetes mellitus. Data from a 2013 national epidemiological survey show that the prevalence of diabetes in China reached 10.9%, with the highest number of cases in the world; among them, type 2 diabetes accounts for more than 90%, and up to two-thirds of these patients are obese [18]. Traditional Chinese medicine classifies diabetes under categories such as "wasting-thirst", "spleen gall", and "obesity" [6]. The Plain Questions: Discussion on Strange Diseases\* clearly proposes the disease name "spleen gall": "This is an overflow of the five qi, called spleen gall... Such a person must have indulged in sweet and rich foods, which cause obesity. Rich food generates internal heat, sweet food causes middle fullness, so the qi overflows upward and turns into wasting-thirst" [1], clearly elucidating the pathogenic chain of indulgence in rich and sweet food → obesity → spleen gall → wasting-thirst [4]. The Spiritual Pivot: Abnormalities of Wei Qi classifies obesity into three types: "fatty person, muscular person, and adipose person", among which "adipose person with pendulous abdomen" is highly consistent with modern central obesity [6]. Based on the classical theory of Huangdi Neijing, this paper starts from the three viscera of liver, spleen, and kidney [9] to systematically explore the etiology, pathogenesis, syndrome differentiation, treatment methods, and preventive adjustments for obese type 2 diabetes mellitus, aiming to provide a more comprehensive and systematic TCM approach for clinical prevention and treatment [14].

## 2. TCM Etiology and Pathogenesis of Obese Type 2 Diabetes Mellitus

### 2.1 Insufficient Innate Endowment and Depletion of Kidney Essence

The kidney is the foundation of innate endowment, stores essence, governs qi transformation, and regulates water metabolism; it is the root of yang qi and yin essence in the body. Insufficient innate endowment and depletion of kidney essence lead to weak viscera, lack of warming by yang qi, and failure to nourish yin essence, which constitute an important internal basis for wasting-thirst [5]. If there is excessive fatigue, intemperance in sexual activity, or chronic disease consumption, further depletion of kidney essence and deficiency of kidney yin can occur, leading to internal generation of deficient fire, dry heat consuming fluids, and the development of wasting-thirst. Arcane Essentials from the Outer Medical Library states: "Overexertion from sexual activity causes depletion of kidney qi, generating heat in the lower burner; heat leads to kidney dryness, and kidney dryness leads to thirst." The Complete Collection of Sagely Relief also records: "Wasting-thirst disease originates from insufficiency of kidney qi and deficiency heat in the lower burner"[13]. Prolonged kidney yin deficiency may damage yang and lead to kidney yang deficiency and decline of vital gate fire, impairing warming and qi transformation, causing water dampness not to be transformed, stagnation of fat and lipid, and obesity, eventually forming the pattern of yang deficiency with phlegm-dampness and cold congealing with blood stasis commonly seen in obese type 2 diabetes mellitus [22].

### 2.2 Improper Diet and Failure of Spleen Transportation

The Yellow Emperor's Inner Classic states: "Heaven feeds man with five qi, earth feeds man with five flavors." The five qi and five flavors generated by nature provide the material basis for human life activities. A balanced intake of the five qi and five flavors is key to maintaining normal function of the viscera and physical and mental health [3]. If a person chronically indulges in rich, sweet, and fatty foods, coupled with improper diet and irregular living, the burden on the spleen and stomach is greatly increased, damaging the healthy qi of the spleen and stomach, resulting in deficiency of spleen and stomach function and failure of transportation [12]. Abnormal transportation and transformation of grains and fluids lead to the inability to properly distribute and metabolize turbid lipids, which accumulate in the body, causing disharmony of the body and ultimately obesity [10]. Dysfunction of spleen and stomach transportation prevents the normal transformation of grain essences into qi and blood; waste and turbid substances stagnate in the middle burner, obstructing qi movement and causing middle fullness. If middle fullness persists and qi stagnation is not relieved, internal heat inevitably develops over time; internal dryness and heat accumulate, leading to spleen gall [6]. The spleen governs transportation and transformation, including the ripening of grains, distribution of essences, and metabolism of water dampness. Dysfunction of spleen and stomach transportation, with failure to properly transform and distribute grain essences, is the core pathogenesis of spleen gall [21]. Moreover, as the disease course prolongs, the pathogenesis becomes complex, often complicated by the interweaving of pathological products such as phlegm turbidity and blood stasis, aggravating disease progression [14]. At the same time, spleen deficiency leads to failure in water and dampness transportation, causing internal generation of dampness, accumulation of phlegm-dampness, and prolonged retention of damp turbidity which may transform into heat or dryness. Internal heat consumes fluids and damages yin fluid; turbid yin is disturbed; dryness-heat and phlegm-dampness bind together, further promoting and aggravating spleen gall, forming a complex pathogenesis of deficiency-excess mixed and dampness-heat-turbidity-stasis intermingling [28].

### 2.3 Liver Failing in Governing Free Flow, Qi Stagnation and Blood Stasis

The Plain Questions: Discussion on Pain says: "All diseases arise from qi," clearly indicating that qi dynamic disturbance and emotional disharmony are important triggers for many diseases, with emotional factors playing a key role in human physiological and pathological changes [8]. The liver is a firm viscus, called "the general official," governs free flow, likes to be smooth and hates depression. It can regulate emotions, coordinate visceral qi dynamics, assist spleen and stomach transportation, and promote the normal distribution and circulation of qi, blood, and fluids [11]. Long-term emotional dysregulation, worry, and anger inevitably lead to liver qi depression, loss of free flow, qi dynamic obstruction, and thus poor blood circulation with internal generation of blood stasis [8]. Qing dynasty physician Tang Rongchuan first proposed the pathogenesis theory of "blood stasis causing thirst": "Blood stasis in the interior causes thirst... It cannot carry water and fluids upwards, thus causing thirst, called blood thirst; when blood stasis is removed, thirst stops," elucidating

that blood stasis obstructing fluid distribution is an important pathogenesis of wasting-thirst [23]. At the same time, the liver wood tends to overact on the spleen earth; liver qi stagnation rebels transversely against the spleen, causing spleen and stomach transportation failure, preventing proper water and dampness metabolism, leading to internal accumulation of damp turbidity. Over time, damp stagnation transforms into heat, generating dryness-heat internally, consuming yin fluids, eventually leading to yin deficiency and dryness-heat, thus inducing wasting-thirst symptoms [29].

### 3. TCM Syndrome Classification of Obese Type 2 Diabetes Mellitus

This disease takes dysfunction of the liver, spleen, and kidney as the root [9] and phlegm, dampness, heat, and stasis as the branches [14]. It is mostly a syndrome of root deficiency and branch excess, mixed deficiency and excess [19]. Based on pathogenic characteristics and clinical manifestations, it can be divided into the following four types [17]:

#### 3.1 Spleen Deficiency with Phlegm-Dampness Type

The pattern of spleen deficiency with phlegm-dampness often arises from weakness of the spleen and stomach, failure of transportation, and internal generation of phlegm-dampness. Clinically, it commonly presents with fatigue, abdominal distension and fullness, sticky mouth and poor appetite, indulgence in rich and sweet foods, obesity, loose stools, normal urination, and average sleep [12]. The tongue is pale, swollen with teeth marks, and covered with a white greasy coating; the pulse is soft and moderate. These are the typical signs of this pattern [18]. The treatment principle is to tonify qi, strengthen the spleen, resolve phlegm, and remove dampness. The basic prescription is Liujunzi Decoction (Six Gentlemen Decoction), containing ginseng, *Atractylodes macrocephala*, *Poria*, licorice, tangerine peel, and *Pinellia ternata*, which together strengthen the spleen, tonify qi, dry dampness, and resolve phlegm [20]. Clinical modification should be flexible based on accompanying symptoms to enhance efficacy [15].

#### 3.2 Liver-Stomach Stagnation Heat Type

When the liver fails to maintain free flow, stagnation transforms into heat, which rebels transversely against the stomach, forming liver-stomach stagnation heat pattern. Main manifestations include obesity, chest and ribside distending pain, epigastric and abdominal fullness, dry mouth and bitter taste, irritability and easy anger, thirst with excessive drinking, and constipation. The red tongue with yellow coating and wiry, rapid pulse are characteristic [8]. Treatment should soothe the liver, relieve depression, clear heat, and harmonize the stomach, using modified Dachihu Decoction (Major Bupleurum Decoction). This formula consists of *Bupleurum*, *Scutellaria baicalensis*, *Paeonia lactiflora*, *Pinellia ternata*, *Aurantii Fructus Immaturus*, rhubarb, ginger, and jujube, and has the effect of harmonizing shaoyang and draining heat stagnation from the interior [16]. Clinical syndrome differentiation and modification should be applied, supplemented by lifestyle adjustments to synergistically improve the condition [30].

### 3.3 Phlegm-Stasis Intermingling Type

Qi dynamic stagnation and internal retention of phlegm-dampness, over time leading to poor blood circulation and interweaving of phlegm and stasis, give rise to this pattern. Clinically, it is often seen with obesity, excessive appetite and easy hunger, fatigue, chest and ribside distension, and epigastric and abdominal fullness. Diagnostic key points include a dark tongue, white thick greasy coating, petechiae on the tongue, tortuous sublingual vessels, and a thin wiry or deep weak pulse. Treatment focuses on regulating qi, activating blood, resolving phlegm, and unblocking collaterals, using modified Erchen Decoction (Two Matured Herbs Decoction) combined with Taohong Siwu Decoction (Peach Kernel and Safflower Four Substances Decoction). Erchen Decoction strengthens the spleen, dries dampness, regulates qi, and resolves phlegm; Taohong Siwu Decoction nourishes blood, activates blood, removes stasis, and unblocks collaterals. The combination treats both phlegm and stasis simultaneously [14].

### 3.4 Spleen-Kidney Yang Deficiency Type

Deficiency of spleen and kidney yang qi, with loss of warming and qi transformation, is the core pathogenesis of this pattern. Common manifestations include obesity, fatigue with reluctance to speak, fear of cold with cold extremities, soreness and weakness of the waist and knees, dizziness and tinnitus, accompanied by clear and long urination, increased night urination, diarrhea before dawn, shortness of breath with spontaneous sweating, pale complexion, and edema of the lower limbs. The tongue is pale, swollen with teeth marks, with thin white coating; the pulse is deep, slow, and weak [22]. The treatment method is to strengthen the spleen, tonify qi, and warm and tonify kidney yang. The basic prescription is Zhenwu Decoction (True Warrior Decoction) combined with Lizhong Decoction (Regulating the Middle Decoction). Lizhong Decoction warms the center and strengthens the spleen; Zhenwu Decoction warms yang and promotes diuresis. The combination can warm and tonify the spleen and kidney, promote diuresis, and reduce edema. Clinically, Huangqi (Astragalus) and Dangshen (Codonopsis) may be added to enhance qi-tonifying effects, and Ze Xie (Alisma) and Zhu Ling (Polyporus) may be combined to strengthen dampness-excreting and diuretic functions, with modifications according to the pattern [25].

## 4. Treatment of Obese Type 2 Diabetes Mellitus from the Liver, Spleen, and Kidney

### 4.1 Treatment from the Liver

The occurrence and development of obese type 2 diabetes mellitus are closely related to liver dysfunction. The Spiritual Pivot: The Root Viscera states: "All five viscera that are weak are prone to wasting-consumption disorder... The liver being fragile makes one liable to wasting-consumption disorder and easily injured" [8], which first clearly indicates that the onset of wasting-thirst is inseparable from liver deficiency. The liver governs free flow, likes smoothness and hates depression, and is the "general official." It can regulate the whole body's qi dynamics, promote the circulation of qi, blood, and fluids. If the liver fails in free flow, leading to qi stagnation, then the

movement of qi, blood, and fluids is obstructed, pathological products such as phlegm, dampness, stasis, and turbidity are generated and accumulate internally, which not only causes obesity but also accelerates the onset and progression of wasting-thirst. At the same time, emotional dysregulation and liver qi depression can lead to qi stagnation, weakened propulsion, internal accumulation of fat and phlegm turbidity, forming obesity and worsening glucolipid metabolism disorders [29]. Therefore, soothing and regulating the liver is an important step in preventing and treating obese type 2 diabetes mellitus. The Plain Questions: The Great Treatise on the Correspondence of Yin and Yang says "Anger damages the liver," so regulating the liver primarily emphasizes emotional adjustment: avoid anger, maintain a smooth mood, keep peace of mind. "The color of the liver is green," so the diet should include plenty of green vegetables to nourish and soothe the liver, avoid rich, sweet, and fatty foods, strong alcohol, and spicy foods to prevent worsening liver-stomach heat and generating phlegm from dampness. The Plain Questions: The Generation of the Five Viscera states: "When man is lying down, blood returns to the liver," and the liver governs the Chou hour (1-3 am); regular daily routine and adequate sleep benefit the nourishment of liver blood and proper free flow [24]. In addition, moderate exercise, herbal tea adjustments, and acupoint massage can assist in soothing the liver, regulating qi, and maintaining normal liver free flow, which has positive significance for the prevention and treatment of obese type 2 diabetes mellitus [24].

### 4.2 Treatment from the Spleen

Obese type 2 diabetes mellitus belongs to the category of "spleen gall" in TCM, and its core pathogenesis is closely related to spleen deficiency with failed transportation and internal retention of phlegm-dampness. The spleen is the foundation of acquired constitution, governs the transportation and transformation of grains and the distribution of essences, likes dryness and hates dampness, and is the pivot of qi dynamic ascending and descending. If improper diet or imbalance between work and rest injures the spleen and stomach, leading to loss of healthy transportation, then grain essences are not transformed properly, stagnate in the middle burner, and turn into fat and phlegm-dampness, causing obesity [12]; spleen deficiency with dampness excess leads to phlegm accumulation, which then obstructs and further exacerbates insulin resistance, promoting the development of obese type 2 diabetes mellitus. Therefore, strengthening the spleen, transforming turbidity, removing dampness, and resolving phlegm are key to treating this disease. The Plain Questions: Discussion on Strange Diseases proposes the treatment for "spleen gall": "Treat it with lan (Eupatorium) to remove stagnant qi." "Lan" refers to aromatic substances that transform turbidity, regulate qi, and awaken the spleen, such as Eupatorium (Peilan), which aromatically awakens the spleen, transforms dampness, and harmonizes the center; Lycopus (Zelan) activates blood, promotes diuresis, removes stasis, and unblocks collaterals. The combination can resolve long-stagnant phlegm-dampness and unblock stasis-turbidity in the collaterals, interrupting the pathogenic chain of "obesity → phlegm → stasis → wasting-thirst" [6]. The Plain Questions: Treatise on Flaccidity says: "The spleen governs the muscles of the body." Moderate exercise (such as walking, jogging, Tai Chi) can strengthen and activate the

spleen and stomach, circulate channels and qi, and promote the transportation of fat and lipids. Daily use of patent Chinese medicines such as Jianpi Pills (Strengthen the Spleen Pills) and Baohe Pills (Preserve Harmony Pills) can regulate the body, strengthen the spleen, harmonize the stomach, and promote digestion [20]. “The color of the spleen is yellow,” so the diet should include plenty of yellow grains such as polished rice, corn, and soybeans, especially emphasizing flour products to nourish the stomach; avoid raw, cold, sweet, and greasy foods to restore healthy spleen function and cut off the source of phlegm-dampness [24].

#### 4.3 Treatment from the Kidney

The kidney is the foundation of innate endowment, stores essence, governs qi transformation, and warms the viscera. It plays a fundamental regulatory role in the onset of obese type 2 diabetes mellitus [11]. Insufficient innate endowment and deficiency of kidney yang cause decline of vital gate fire; yang qi cannot warm, steam, or promote the distribution of essences; the viscera lose nourishment; qi transformation is impaired; water dampness stagnates internally; fat and lipids are not transformed; and obesity develops [25]. Chronic disease affecting the kidney, or yin deficiency injuring yang, leads to kidney yang deficiency, yin and yang deficiency, loss of astringent control, and abnormal fluid metabolism, manifesting as polyuria, increased night urination, soreness and weakness of the waist and knees, fear of cold with cold extremities, etc., which corresponds to the lower wasting-thirst syndrome. Clinically, warming and tonifying kidney yang and transforming qi to promote urination are often used to treat wasting-thirst caused by kidney yang deficiency, yin and yang deficiency, and vital gate fire decline. Zhang Zhongjing in *The Golden Cabinet* used Shenqi Pills (Kidney Qi Pills) to warm and tonify kidney yang, mainly treating obesity, wasting-thirst, and excess urination in men, following the principle of “adding fire to the source to reduce yin shadows” [13]. Daily care should favor warm-tonifying foods and avoid cold and cooling foods, choosing warm-kidney foods such as mutton, leek, and walnut kernels, and avoiding raw cold fruits and iced drinks. The *Spiritual Pivot: Rooted Spirit* says: “The kidney stores essence,” so one should regulate sexual activity, avoid overexertion, to consolidate kidney essence and protect kidney qi. Patent medicines such as Jin Gui Shen Qi Pills and Yougui Pills may be used as appropriate to supplement kidney qi for preventive health care. Combined with acupoint massage, moxibustion, and Baduanjin exercise, these can warm the kidney, assist yang, strengthen the waist and bones, improve glucolipid metabolism, and delay disease progression [25].

### 5. Prevention of Obese Type 2 Diabetes Mellitus Based on \*The Yellow Emperor’s Inner Classic

The Yellow Emperor’s Inner Classic is a classic of TCM health preservation that has been passed down for more than two thousand years. Wang Bing, a Tang dynasty physician, praised it as “the origin of the ultimate Way and the beginning of life cultivation” [24]. The book systematically constructs the theoretical system of TCM health preservation, establishes the theoretical foundation of the science of health preservation, and holds extremely high clinical guiding value for the

preventive treatment of modern diseases. The core ideas contained within—holistic health preservation, following nature, and regulating the viscera—can provide important theoretical support and practical guidance for the early prevention of obese type 2 diabetes mellitus, complementing the viscera-based treatment approach and achieving “preventing disease before it begins and preventing progression after it has begun” [28].

#### 5.1 Following the Four Seasons

The *Plain Questions: Treatise on Regulating the Spirit According to the Four Seasons\** clearly proposes the core health principle: “The sages nourish yang in spring and summer, and nourish yin in autumn and winter” [2]. The yin and yang of the four seasons in nature follow a pattern of waning and waxing. The qi and blood of the human viscera correspond to the yin and yang of nature. Health preservation should follow the rhythm of the four seasons: in spring and summer, protect the body’s yang qi, assist its upward movement and dispersion; in autumn and winter, nourish yin essence, allow yin fluids to be retained and stored. Thus, the body maintains the balanced state of “yin and yang in equilibrium,” enhances its adaptability to seasonal climate changes, consolidates healthy qi, and prevents invasion by external pathogens, thereby preventing the occurrence of obese type 2 diabetes mellitus holistically.

#### 5.2 Regular Daily Routine

The *Yellow Emperor’s Inner Classic* considers “regular daily routine” as a key factor in maintaining health and prolonging life. \*The Plain Questions: Treatise on the Life-Giving Spirit of Heaven\* states: “Yang qi is active outside during the day. It begins at dawn, reaches its peak at noon, and declines at sunset, when the pores close,” illustrating that the body’s yang qi undergoes a daily rhythm of growth and decline in accordance with the yin-yang rhythm of nature [24]. Therefore, daily living should follow the principle of “work at sunrise and rest at sunset,” aligning with the rhythm of yang qi emergence, flourishing, and decline throughout the day. Additionally, drawing on the four-season health theory from \*The Plain Questions: Treatise on Regulating the Spirit According to the Four Seasons\*, one should adjust daily routine according to the rhythm of spring birth, summer growth, autumn harvest, and winter storage, protecting the body’s yang qi and yin essence, avoiding irregular living that leads to viscera dysfunction and depletion of healthy qi, thereby reducing the risk of obesity and abnormal glucose metabolism.

#### 5.3 Moderating Food and Drink

Dietary regulation is an important component of the Inner Classic health preservation system. The concept of “moderation in food and drink” emphasizes that eating and drinking must be controlled, and overeating or erratic meals are strictly prohibited. The *Plain Questions: Treatise on the Five Viscera Based on the Qi of the Four Seasons* states: “Five grains are for nourishment, five fruits are for assistance, five domestic animals are for benefit, five vegetables are for filling. Take them with harmonious flavors to supplement essence and qi.” This defines the principle of a balanced diet,

advocating a reasonable combination of staple foods, vegetables, fruits, and meats to ensure comprehensive and balanced nutrition. At the same time, one should “harmonize the five flavors” properly, balancing sour, bitter, sweet, pungent, and salty flavors, avoiding any flavor preference, especially chronic indulgence in rich, sweet, and fatty foods, to prevent overburdening the spleen and stomach and the internal generation of phlegm-dampness and turbid lipids, thereby preventing the onset and development of obesity and type 2 diabetes from the dietary source [10].

#### 5.4 Regulating Emotions

Mental-emotional state is closely related to physiological and pathological conditions. Modern medical studies have also confirmed that severe emotional fluctuations and emotional dysregulation can directly affect blood glucose metabolism and worsen metabolic disorders [30]. The Yellow Emperor’s Inner Classic places great emphasis on emotional health preservation. The *Spiritual Pivot: Ancient Treatise on Mental State* proposes: “Taking tranquility and happiness as tasks, taking self-satisfaction as achievement, the body will not decay, the spirit will not scatter, and one may live over a hundred years.” It further emphasizes: “When the mind is calm and without desire, genuine qi follows; when the spirit is kept within, where can disease come from?” [24]. This suggests that daily life should focus on emotional regulation, controlling one’s emotions, avoiding extreme emotional stimuli such as extreme anger, joy, grief, worry, or fear, maintaining a peaceful mind and a relaxed emotional state, so that qi dynamics flow smoothly and qi and blood are harmonious. This prevents emotional dysregulation from causing liver qi depression, spleen-stomach disharmony, and thereby blocks the pathological pathway by which emotional factors induce obesity and wasting-thirst, achieving prevention before disease onset [27].

### 6. Summary and Outlook

With changes in people’s lifestyle and dietary structure, the prevalence of type 2 diabetes mellitus with obesity continues to rise. Obesity and T2DM interact and are inseparable in the development and progression of the disease. Therefore, preventing and treating type 2 diabetes mellitus starting from obesity is particularly important. In summary, the occurrence of obese type 2 diabetes mellitus is closely related to the three viscera—liver, spleen, and kidney. In terms of syndrome classification, this paper summarizes four main patterns: spleen deficiency with phlegm-dampness, liver-stomach stagnation heat, phlegm-stasis intermingling, and spleen-kidney yang deficiency [18]. In treatment, appropriate classic formulas are selected and modified based on pattern differentiation. Moreover, discussing how to prevent and treat obese type 2 diabetes mellitus from the liver, spleen, and kidney respectively helps broaden the thinking for treating this disease. Finally, based on the health preservation concepts of The Yellow Emperor’s Inner Classic, guidance is provided on how to prevent obese type 2 diabetes mellitus in daily life. However, current research on strengthening the spleen, soothing the liver, and benefiting the kidney, and their roles in the occurrence and development of this disease, is not extensive or in-depth. Furthermore, this paper lacks the corresponding pattern-based trial populations and research

results. Therefore, we hope that future research will elucidate the prevention and treatment of obese type 2 diabetes mellitus from the perspectives of the liver, spleen, and kidney from multiple angles and aspects, and conduct in-depth research and analysis through clinical trials, in order to achieve the goals of preventing disease onset, delaying disease progression, and improving quality of life.

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