*The Healthcare Medicine Institute (HealthCMI) presents*

# High Cholesterol Part 2

# Chinese Medicine Theory

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# High Cholesterol

## ~ A Three Part Series ~

## Outlines of all Three Courses

## High Cholesterol Pt. 2: Chinese Medicine Theory

Part Two of this three part series on high cholesterol and high triglycerides is approved for 4 continuing education hours. Part One covers western medicine diagnosis and treatment. Part Two covers Chinese medicine theory for the treatment of hyperlipidemia. Part Three covers Chinese medicine dietetics food treatment therapy for hyperlipidemia.

**Part Two:**
Learn the Chinese medicine diagnostics and theoretical principles of high cholesterol and high triglycerides. Learn the syndromes associated with hyperlipidemia according to Chinese medicine. This includes a detailed look at the role of the spleen, liver, kidneys, and heart in a Chinese medicine context. Learn biomedical perspectives on Chinese medicine through an examination of modern research. This includes an examination of lipid levels in relation to Chinese medicine diagnostics. This course teaches the Chinese medicine way of diagnosing and understanding hyperlipidemia and is prerequisite to taking Part Three which covers Chinese medicine food therapy treatment for hyperlipidemia.

**2. Dyslipidemia in Chinese Medicine**

**2.1 Introduction to Several Important Concepts in Chinese Medicine (CM)**

**2.2 Fundamentals of Dyslipidemia in Chinese Medicine**

Symptoms of Spleen Qi Deficiency
Spleen Deficiency and Dyslipidemia in Modern Research
Liver Qi Stagnation as a Factor in Dyslipidemia
Symptoms of Liver Qi Stagnation
Liver Qi Invading the Spleen
Symptoms of Liver Qi Invading the Spleen
Liver Qi Deficiency as a Factor in Dyslipidemia
Symptoms of Liver Qi Deficiency
Liver Yin Deficiency and Deficiency Heat
Symptoms of Liver and Kidney Yin Deficiency with Deficient Heat
Symptoms of Heart Qi Deficiency

**3. Prevention and Treatment of Dyslipidemia in Chinese Medicine**

**3.1 Lifestyle3.1.1 Sleep Hygiene**


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**3.1.2 Elimination- Bowel Movement**

**3.1.3 Dietary Habits**

Meals and Time Intervals
Guidelines for Breakfast, Lunch, and Dinner
General Dietary Considerations

## High Cholesterol Pt. 1: Western Medicine

Part One of this three part series on high cholesterol and high triglycerides is approved for 7 continuing education hours. Part One covers western medicine diagnosis and treatment. Part Two covers Chinese medicine theory for the treatment of hyperlipidemia. Part Three covers Chinese medicine dietetics food treatment therapy for hyperlipidemia.

**Part One:**
Learn the statistical prevalence, pathophysiology, signs and symptoms, and serum lipid levels relevant to an understanding of hyperlipidemia. Learn the role that chylomicrons, very low-density lipoproteins (VLDL), intermediate-density lipoproteins (IDL), low-density lipoproteins (LDL), and high-density lipoproteins (HDL) play in high cholesterol and high triglycerides. Learn about drug treatment options including HMG-CoA reductase inhibitors (statins), bile acid sequestrants, nicotinic acid, and fibric acids. This course covers in detail the diagnosis and treatment of high cholesterol and triglycerides according to western medicine.

**Introduction**

**1. Dyslipidemia in Western Medicine**

**1.1 Definition**

**1.2 Prevalence**

**1.3 Pathophysiology**

**1.4 Signs and Symptoms**

**1.5 Description of Lipoproteins**

Lipoprotein Structure
LDL Cholesterol (LDL-C)
HDL Cholesterol (HDL-C)
VLDL Cholesterol (VLDL-C)
Chylomicrons
Characteristics of the Major Lipoprotein Classes
Characteristics of Lipoproteins

**1.6 Serum Lipid Levels**


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Total Cholesterol
LDL Cholesterol
HDL cholesterol
Triglycerides
VLDL Cholesterol
ATPIII Serum Lipid Level Classification (mg/dL)

**1.7 Cholesterol Ratios**

**1.8 Determining Risk**

High-risk
Intermediate Risk
Low-risk

**1.9 Therapeutic Options**

Drug Treatment
Effects of the major dyslipidemia drugs on serum lipid levels

**1.9 Non-Mainstream Ideas about Cholesterol and Dyslipidemia**

## High Cholesterol Pt. 3: Chinese medicine dietetics

Part Three of this three part series on high cholesterol and high triglycerides is approved for 12 continuing education hours. Part One covers western medicine diagnosis and treatment. Part Two covers Chinese medicine theory for the treatment of hyperlipidemia. Part Three covers Chinese medicine dietetics food treatment therapy for hyperlipidemia.

**Part Three:**
Learn Chinese medicine dietetics (food therapy) for treating hyperlipidemia. This includes lifestyle practices, dietary therapies, and herbal remedies. Learn Chinese medicine perspectives on the medicinal properties of individual foods and meals. Modern research is also presented with the Chinese medicine analysis for a biomedical understanding of Chinese medicine food principles. Part Two of this series is prerequisite to an understanding of this course.

**3.2 Food Therapy**

**3.2.1 Individual Foods**

**1. Fruits**

1. Chinese Date (Fructus Zizyphi Jujubae, Jujube)
2. Hawthorne Fruit (Fructus Crataegi)
3. Chinese wolfberry fruit
4. Sunflower Seed5. Tomato6. Kiwi Fruit


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7. Fig
8. Walnuts
9. Apple

**2. Vegetables**

1. Cucumber
2. Celery
3. Eggplant
4. Daikon Radish
5. Carrot
6. Garlic
7. Shitake Mushroom
8. Tofu (soybean curd, doufu)

**2.1 Grains**

1. Buckwheat
2. Oats
3. Corn

### 3.2.2 Lipid-Reducing Food Formulas

**1. Teas**

1. Hawthorn and chrysanthemum tea
2. Lotus leaf tea (Folium Nelumbinis Nuciferae)
3. Chinese wolfberry tea
4. Reishi mushroom tea

**2. Congees (rice porridge)**

1. Plain-Congee
2. Corn-meal Congee
3. Carrot Congee
4. Peach Kernel Congee
5. Garlic Congee
6. Coix Congee (Job's Tears Seed Congee)
7. Mung Bean Congee
8. Peanut-skin Congee

**3. Soups**

1. Celery and Jujube Soup
2. Hawthorn Berry and Cassia Seed Soup
3. Chrysanthemum, Honeysuckle, Mulberry Leaf, Hawthorn Berry Soup
4. Lotus leaf, winter melon skin, and pumpkin skin drink
5. Daikon, winter melon skin and lettuce drink

**Conclusion**


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# High Cholesterol Pt. 2: Chinese Medicine Theory

## 2. Dyslipidemia in Chinese Medicine

Management of any condition, including dyslipidemia, with Chinese Medicine (CM) requires an understanding of CM ideas, and CM physicians study for many years to gain proficiency in CM's unique understanding of physiology, pathophysiology, treatment, etc. The aim of this course, therefore, is not to train high-level CM physicians, but rather provide nurses and other biomedical health practitioners with sufficient knowledge to employ CM dietetics, lifestyle practices, and simple herbal remedies to aid in the management of dyslipidemia.

### 2.1 Introduction to Several Important Concepts in Chinese Medicine (CM)

Firstly, CM has two ways of classifying any given illness- these are *disease* and *syndrome* (in Chinese, 病 bing, and 证 zheng). Disease, also know as *disease name*, is similar to biomedical classification of disease, for example diabetes, hypertension, migraine headache, gastritis, and dyslipidemia. However, in CM these are not descriptive enough to guide treatment as each of these diseases can present with different signs and symptoms. It is this presentation, which varies between individuals and even within the same individual at different stages of disease, which is called *syndrome/zheng*. Differential diagnosis of this syndrome is called *bian zheng* 辨证, or in English *syndrome differentiation*.

Therefore, in order to effectively treat dyslipidemia with CM one must be able to differentiate the patient's current syndrome, and not use reductionist thinking in an attempt to find the magic-bullet herb or remedy that will normalize serum lipid levels in every patient. The latter is a hit-and-miss approach that will work on patients that are fit for the particular remedy, but fail in the others who are not, and in extreme cases may aggravate the condition or cause other side effects.

That said, there are often similarities between syndromes in patients with the same disease. In other words, many diseases have tendencies, and the syndromes they produce may have similarities. In the case of dyslipidemia there are some general tendencies, and these will be discussed later.

Second, this course will include discussion of the internal organs as understood in CM. It is crucial to understand that the CM notion of the internal organs is different from the biomedical understanding. The CM organs are named after the anatomical organs (liver,

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spleen, kidneys, etc.), and while in some cases they include some of the functions of the anatomical organs for which they are named, each organ is in fact more akin to a group of related physiological phenomenon. To distinguish the CM organs from the anatomical organs, the former will be capitalized, while the latter will remain in lower case.

## 2.2 Fundamentals of Dyslipidemia in Chinese Medicine

Dyslipidemia is not a traditional disease classification in CM, rather it falls within the scope of several traditionally recognized conditions such as *phlegm turbidity, phlegm dampness, turbid obstruction,* and *obesity.* The main organs involved in the disorder are the Spleen, Liver, Kidneys, and Heart.

**Spleen**

The Spleen[1] in CM is somewhat akin to the digestive system, and is in charge of digestion of food and liquid, assimilation and transportation of nutrients, and also plays a role in the elimination of metabolic waste products. The Spleen is responsible for *transportation* and *transformation*. Transformation refers to the Spleen's role in transforming food and drink (digestion), wherein the Spleen separates the "clear"(nutritious) part of food and liquid from the "turbid" part (metabolic waste). Transportation refers to upward distribution of the "clear" nutrients derived from food to the Liver, Heart, and Lungs where they are incorporated into the blood, and the downward movement of the "turbid" metabolic wastes into the intestines where they are finally eliminated from the body via the urine and stool.

When the Spleen's functions of transformation and transportation are impaired, the "clear" does not properly ascend, and the "turbid" does not properly descend, resulting in formation and accumulation of metabolic waste products such as phlegm and dampness, both of which are a form of "turbidity". Therefore the Spleen is said to be the *source of phlegm*, phlegm being a representative pathological body fluid. While it is difficult to make comparisons between CM and biomedical notions of pathology without being reductionistic, it is fair to say that in the case of hyperlipidemia the excessive amounts of serum lipids are essentially a type of turbid phlegm dampness. Therefore, hyperlipidemia patients almost always suffer from phlegm and/or damp accumulation. Because a dysfunctional Spleen is the primary source of these pathogenic fluids and a healthy Spleen is able to assist in their metabolism and elimination, improving Spleen function is often a primary strategy in treatment of dyslipidemia.

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[1] The term for "Spleen" in Chinese is "pi" (脾, pronounce "pea"), and indeed the modern meaning of this character does indicate the anatomical spleen. However, in the 2000 year-old major canonical work of Chinese medicine, the "Huang Di Nei Jing" (Yellow Emperor's Classic of Medicine), the anatomical description of the "pi" actually fits that of the pancreas. And in fact, the functions of the "Spleen" are much more akin to the pancreas than they are to the anatomical spleen. Therefore, it may be that the early meaning of the character was "pancreas", and that at a later time the character came to describe the anatomical spleen. However, for the sake of convention and to avoid confusion with the English language Chinese medical literature, the author will use the standard translation of "Spleen" in this course.

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There are basically two causes of Spleen dysfunction which can lead to formation and accumulation of pathogenic fluids. The first is termed “external”, and is due to irregular dietary habits (such as over-eating, eating at irregular times, or skipping meals), and excessive consumption of sweets, fatty foods, and/or alcohol, all of which can damage the Spleen and cause obstruction of the Spleen mechanism. The second is termed “internal”, and is due to dysfunction of the internal organs (including malfunction of Spleen transportation and transformation) leading to an inability of the body to “transform” fats and “descend” turbidity. This results in the accumulation of fats, phlegm, turbidity, and stagnant blood in the blood vessels with subsequent obstruction of the blood vessels.

Regardless of the cause, internal or external, damage to the Spleen invariably leads to a weakening, or deficiency, of the Spleen, which further impairs its ability to metabolize and eliminate pathogenic fluids. Symptoms of Spleen qi deficiency (i.e. weakened Spleen function) include poor appetite, abdominal distention exacerbated by eating, loose stools, shortness of breath, and fatigue (especially of the limbs). In clinic it is common to see overweight and obese patients with dyslipidemia, and in fact many of them suffer from deficiency of Spleen qi. In CM these types of patients are usually considered to be suffering from “deficiency-type obesity”, a condition characterized by repletion/excess in the form of accumulation of pathogenic fluids, with an underlying deficiency of Spleen qi. The typical patient is middle-aged or above, overweight, with accompanying symptoms such as dizziness with a heavy feeling in the head, stuffiness of the chest, abdominal fullness, nausea, fatigue, weakness, and a pale tongue with a greasy white tongue-coating. Note that while Spleen qi deficiency is characterized by poor appetite, there are many patients like this with strong appetite. This is often due to concurrent heat in the Stomach, which causes hunger. This condition is known as “strong Stomach, weak Spleen”, and is characterized by hunger (Stomach heat) but inability to eat much and/or bloating and distention after eating (Spleen weakness).

A note about the Stomach, which is closely related to the Spleen, is in order here. The Stomach in CM is responsible for receiving food and liquids after ingestion, and for “rotting and ripening” them before passing them on to the Spleen for further digestion. Because the Stomach is in charge of receiving food and liquid, when there is heat in the Stomach hunger is usually exaggerated. However, heat in the Stomach can take two forms. One is a deficiency condition where the Stomach is in fact weak, the hunger is a gnawing uncomfortable hunger, when presented with food the patient is unable to eat much, and after eating there may be discomfort. The other is an excess condition that presents with strong hunger with ability to eat quite a bit, but after eating hunger returns rapidly. Here, there is often epigastric pain, burning, or gnawing hunger pain, as well as bad breath, bleeding gums, and hard, dry stool. In both types, thirst with a preference for cold drinks is present as the body craves cold liquids in an attempt to cool the Stomach heat. But, because the Spleen prefers to be warm, cold drinks can further impair Spleen function, and therefore CM discourages their consumption in all cases.

**Symptoms of Spleen Qi Deficiency**

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- poor appetite
- abdominal distention exacerbated by eating
- loose stools
- shortness of breath
- fatigue (especially of the limbs)
- pale and puffy tongue with tooth-marks on the sides

***Spleen Deficiency and Dyslipidemia in Modern Research***

From a biomedical perspective, the CM Spleen is closely related to the various organs and processes of the digestive system, and Spleen deficiency is primarily a weakness of digestive system function. Modern research shows that the Spleen is also closely related to various receptors and enzymes in the body and that strengthening the Spleen can improve their functions, leading to acceleration of metabolic processes. Dysfunction of these receptors and enzymes is one of the main causes of dyslipidemia. Following are two representative studies.

Research by Xiong Wen-Sheng et al[i] shows that regulating Spleen function and transforming phlegm can regulate lipid levels and has an effect upon enzymes involved in lipid metabolism. Lipoprotein lipase (LPL), a key enzyme in lipoprotein metabolism, catalyses the hydrolysis of the triacylglycerol component of circulating chylomicrons and very low density lipoproteins, thereby providing non-esterified fatty acids and 2-monoacylglycerol for tissue utilization. Abnormalities in LPL function have been found to be associated with atherosclerosis, chylomicronaemia, obesity, Alzheimer's disease, and dyslipidemia associated with diabetes, insulin resistance, and infection[ii]. Xiong et al found that a Chinese herbal preparation called Regulate Spleen Transform Phlegm Reduce Lipids Pill significantly increased LPL activity (more so than fenofibrate) and lowered serum triglycerides.

Research by He Ren[iii] shows that the method of strengthening the Spleen, dissolving phlegm, and transforming blood stasis can reduce levels of serum total cholesterol and triglycerides, and increase levels of HDL-C. The increase in serum HDL-C concentrations also leads to an increase in LPL activity, possibly explaining the reduction in serum triglycerides.

**Liver**

The Liver in CM is responsible for “free coursing” (in Chinese, 疏泄/shu xie), which essentially means the Liver is responsible for ensuring the free and unobstructed movement of qi[2] and the so-called qi-dynamic, or qi-mechanism, which represents the

[2] Here a note on “qi” is indicated. While qi has been translated variously as “energy” and “life-force”, among other things, there is really no equivalent term in English, and the word qi must be understood on its own. In the author’s opinion, qi is not a discrete “thing”. Rather, it is a word used to describe phenomenon, and as applied in relation to the human body is used to describe anatomical and physiological phenomenon. In general, qi refers to phenomenon involving function, movement, heat, force, etc., which is why it is

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functional aspects of qi. By ensuring the free-coursing of qi, the Liver enables the physiological processes of the various systems of the body to proceed normally. When Liver function is healthy, the movement of qi and blood and the function of the organs are harmonious. When Liver qi is congested or stagnant, a wide range of disorders may result. In regards to dyslipidemia, the most important of these are the effects of Liver disharmony on Spleen and Stomach function, and blood circulation. The Liver's free-coursing function assists the Spleen and Stomach in the process of digestion and elimination. Impairment of this function leads to impaired Spleen and Stomach function. Furthermore, as qi is the motive force behind the movement of blood, impaired qi circulation leads to impaired blood circulation and blood stagnations. These are all significant factors in both the etiology and systemic effects of dyslipidemia.

**Liver Qi Stagnation as a Factor in Dyslipidemia**

Emotional imbalance and other factors can affect the Liver's free-coursing function, resulting in Liver qi stagnation. This causes stagnation of the qi-mechanism, impairment of blood circulation, and stagnation of body fluids which then transform into phlegm and dampness. Modern research shows that emotions have an effect on serum lipid levels, and that long-term depression, anxiety, and grief can lead to an increase in serum cholesterol levels[iv]. In particular, long-term stress and anxiety can cause imbalances in endocrine and CNS function, and reduced insulin secretion and lipoprotein lipase (LPL) activity[v]. LPL increases lipid metabolism and breaks down triglycerides into glycerin and fatty acids, making them available for tissue utilization. Decreased LPL activity causes a reduction in triglyceride breakdown, leading to elevation of serum triglycerides. One study showed significant reduction in serum lipids of hyperlipidemia patients that made no dietary changes but routinely practiced relaxation techniques for 3 months[vi]. This shows the importance of stress reduction and emotional wellbeing in the prevention and treatment of dyslipidemia, and reiterates the significance of the Liver's free-coursing function in relation to dyslipidemia.

**Symptoms of Liver Qi Stagnation**

- depression
- irritability
- agitation
- flank distention
- sighing
- belching.

**Liver Qi Invading the Spleen**

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sometimes translated as "energy", but it can also refer to substance, for example blood, bones, flesh, etc., which are denser forms of qi. Therefore, it is a mistake to conceive of qi as a metaphysical substance traveling through and animating the human body. It is really just a word that describes phenomenon, and in medicine, the various substances and functions of the body.

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Under normal physiological conditions, the Liver and Spleen mutually assist each other in their respective functions. However, under pathological conditions they adversely impact each other. The most common of these conditions is known as Liver qi invading the Spleen. The Spleen is the source of blood production, and the Liver is said to store the blood, therefore these two organs are closely related to the quality of the blood. When the Liver and Spleen are harmonious, the "clear" essence of the food is properly extracted by the Spleen and incorporated into the blood, the blood is circulated without impairment, and the "turbid" dregs of the food are eliminated from the body. When Liver qi stagnates due to improper dietary habits, emotional imbalance, or other factors, the free-coursing function of the Liver is disrupted. This affects the Spleen's ability to separate the "clear" from the "turbid" and gives rise to pathological fluids such as phlegm and dampness which clog the arteries and elevate serum lipid levels. It also impairs the smooth circulation of blood, causing blood stagnation. One modern study by Wei et al[vii] showed significant reduction in serum lipids in 160 hyperlipidemia patients using herbs to harmonize Liver and Spleen function. Therefore, while phlegm and blood stagnation are significant factors in dyslipidemia, they are in fact the result of physiological imbalance, such as Liver and Spleen disharmony.

**Symptoms of Liver Qi Invading the Spleen**

- irritability
- bitter taste in the mouth
- distention in the chest and ribs
- belching
- fullness and distention after eating
- poor appetite

**Liver Qi Deficiency as a Factor in Dyslipidemia**

In elderly individuals the body's qi begins to wane, and Liver qi deficiency is a common condition. Deficiency of Liver qi impairs the Liver's ability to carry out its normal physiological functions. Weakening of the Liver's free-coursing function leads to formation of phlegm dampness, and stagnation of blood. These give rise to elevated serum lipids and pathological changes of the arteries, such as atherosclerosis. Herbs which supplement qi have been used successfully to lower serum lipids, improve blood circulation, and prevent development of atherosclerosis[viii]. Modern research shows astragalus (Radix Astragali Membranacei), a commonly used qi-supplementing herb, can dilate blood vessels, improve blood circulation, reduce blood viscosity, lower serum lipids, and prevent atherosclerosis[ix].

**Symptoms of Liver Qi Deficiency**

- pale and dim complexion
- pale lips
- weakness and fatigue
- tinnitus or hearing loss
- easily frightened or fearful

**Liver Yin Deficiency and Deficiency Heat**


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When the body is healthy, yin and yang[3] are in balance. However, as individuals age, the body's yin and yang naturally decline. In certain individuals, decline of yin is more predominant. This leads to an imbalance between yin and yang, with a relative excess of yang. This condition is known as yin deficiency with deficiency heat. Because yin phenomenon are cooling and yang phenomenon are warming, the relative abundance of yang causes yang phenomenon to be more prevalent, thus there are signs of heat (yang). However, since this heat is due to a deficiency of yin, it is termed deficient heat. Deficient heat scorches the normal, healthy body fluids, turning them into pathological fluids such as phlegm. Phlegm, as previously discussed, is a component in the etiology of dyslipidemia. Furthermore, Liver yin deficiency often leads to impairment of Liver free-coursing, which as discussed above, leads to formation of phlegm dampness, stagnation of blood, etc.

Because the Liver and Kidneys in CM are closely related, Liver yin deficiency is often concurrent with Kidney yin deficiency.

**Symptoms of Liver and Kidney Yin Deficiency with Deficient Heat**

| |
|---|
| dry eyes, headaches, dizziness, tinnitus, hot-flashes, thirst with preference for cold drinks, dry stool and constipation, insomnia, restlessness, irritability, weakness and soreness of knees and lumbar region, spermatorrhea, dry throat, etc. |

**Heart**

The Heart in CM is related to the anatomical heart and the mind. In regards to dyslipidemia, the former is of greater significance. The Heart governs the blood vessels, and circulation of blood and fluids through the vessels relies on the pumping action derived from Heart qi. Stagnant blood and phlegm turbidity obstruct the blood vessels and impair blood circulation. When this continues over a long period of time, the Heart qi is damaged and depleted. Because qi is the motive force behind the movement of blood, Heart qi deficiency leads to further impairment of blood circulation and increased stagnation of blood.

Dyslipidemia is ultimately the result of underlying deficiency with overlying excess. Deficiency impairs the function of the organs, such as the Heart, Liver, Spleen, and Kidneys, and gives rise to excess in the form of pathogens such as phlegm turbidity and blood stagnation. These pathogens then obstruct the blood vessels and the yang-qi of the chest (the Heart qi and yang). The resulting conditions are known in Chinese medicine as "chest impediment" (xiong bi 胸痹) and "Heart pain" (xin tong 心痛).

[3] Yin and Yang are terms used to categorize phenomenon, and like qi, should not be thought of as distinct entities. In relation to the human body, yin describes those aspects of the body that have yin properties, such as the body fluids and the various physiological phenomenon that are related to calming, cooling, resting, etc. Yang describes those aspects of the body that are related to activity, warmth, movement, function, etc. Yin and Yang are fundamental ideas in Chinese medicine and must be understood correctly in order to grasp Chinese medical ideas. A detailed discussion of Yin and Yang is beyond the scope of this course, but can readily be found in other sources.

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Modern medicine considers there to be three main factors in the development of impaired blood circulation[x]. The first is coronary, wherein heart pump strength is weakened. CM explains that when Heart qi is deficient the Heart's function of pumping and circulating the blood is weakened, and stroke volume and cardiac output are decreased. The second is vascular, such as arteriosclerosis and narrowing of the vascular lumen. The third is hematological, such as changes in blood rheology. CM explains that phlegm and blood stagnation retained in the blood vessels affect the quality and nature of the blood, slow the blood circulation, and lead to obstruction and reduced flexibility of the blood vessels.

**Symptoms of Heart Qi Deficiency**

| |
|---|
| palpitations, fatigue and weakness, shortness of breath, spontaneous sweating, etc. Symptoms of chest impediment and Heart pain vary depending on etiology, but some common symptoms include fullness and oppression in the chest, referred pain in the back, shortness of breath with difficulty laying down flat, angina pain, easy sweating, cold limbs, edema in the extremities, etc. |

# 3. Prevention and Treatment of Dyslipidemia in Chinese Medicine

## 3.1 Lifestyle

### 3.1.1 Sleep Hygiene

Chinese medicine holds that regular sleeping habits are crucial to good health. Modern research shows that sleep habits have an effect on serum lipid levels[xi] and BMI[xii]. However, the majority of modern studies only look at total amount of sleep, ignoring other aspects of sleep hygiene such as bedtime, and regularity of bed/wake times. Chinese medicine contends that sufficient sleep time and regularity of bedtime and wake-time are all important. In general, 8 hours of sleep is considered an appropriate amount for most individuals. For sick and/or weak patients more sleep may be necessary. Bedtime ideally should be around 9pm, and preferably no later than 10pm, and it is important to go to bed at roughly the same time each night. Children need around 11 hours of sleep each day, including naps, and should generally sleep earlier than adults. While this author was unable to find modern studies substantiating all of these ideas, the experience of CM physicians over the last 2000+ years indicates they are valid.

### 3.1.2 Elimination

**Bowel Movement**

CM has long recognized that healthy bowel movements are key to health and longevity, and the importance of this cannot be overstressed. The stool is made up largely of metabolic waste products that need to leave the body in a timely manner. If they do not, these metabolic waste products cannot completely leave the body and a host of problems can result.

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While allopathic medicine may not recognize any connection between bowel movements and dyslipidemia, CM does. The metabolic waste that stagnates in the body as a result of poor bowel movements often manifests as dampness and heat, both of which are implicated in conditions such as dyslipidemia, atherosclerosis, and CHD, as well as many other conditions.

Most patients will report having "normal" bowel movements. However, this often means "normal" (read, "usual") for them, and is not "normal" in the sense of what is healthy or ideal. According to CM, a normal, healthy bowel movement consists of the following:

1. Occurs once each day at a regular time, preferably in the morning shortly after waking.
2. Stool should be thick, formed but soft, and in one long piece which does not float. Stool should not be thin, dry, hard, sticky, loose, or in many pieces. There should be no undigested food in the stool, exceptions being things like seeds, nuts, corn, and other difficult to digest items.
3. There should be a large quantity of stool, which is very easy to pass (no straining, and finished within a minute or so), and after evacuation the abdomen should feel very empty and light.
4. Stool should not be sticky. When wiping the anus, one wipe should be sufficient, and even then there should ideally be very little, or even nothing to wipe off. The stool should not stick to the toilet bowl. If one needs to wipe many times, or stool is sticking to the bowl, this is considered "sticky".

Bowel movements not meeting these requirements cannot be considered normal according to CM. Furthermore, these requirements must be met everyday. If they are only occasionally met, the bowel movements cannot be considered normal. Likewise, even if they are only occasionally missed, the bowel movements cannot be considered entirely normal or healthy. Ideally, these requirements are met everyday.

While the CM diagnosis and treatment of abnormal bowel movements is complex and beyond the scope of this course, there are practices that help promote healthy bowel movements.

1. Cultivate a regular bowel movement schedule. If one does not already have a bowel movement each day shortly after waking, one should cultivate this habit by sitting on the toilet each morning in an attempt to pass the stool. One should not strain at the stool, or worry if the stool does not come, but rather try to coax the body into feeling that this is the correct time to go. If practiced routinely, this can help promote a regular movement.

2. Self-massage to stimulate intestinal peristalsis and help induce a timely, more complete bowel movement. Upon waking, but before getting out of bed in the morning, one can perform abdominal self-massage. Lying supine in the bed, gently rub the abdomen in a clockwise direction (the direction of peristaltic movement; clockwise, as if the abdomen itself were the face of a clock) with both hands flat over the abdomen for several minutes. Then, starting just above and to the left of symphysis pubis, make small, somewhat deeper, clockwise motions over the large intestine with an emphasis on the stroke in the

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direction of large intestine peristalsis. Massage a small section of the large intestine in this manner for 5 to 10 seconds, then move in a counter-clockwise direction to the next, more proximal section of the large intestine and massage there for 5 to 10 seconds. Continue in this manner until coming full-circle. Finish off the routine by repeating the first method again for a minute or two. For best results, this massage should be performed each morning.

### 3.1.3 Dietary Habits

Diet plays a major role in the development, prevention, and treatment of dyslipidemia. A huge amount of modern research shows that foods have significant impact on serum lipid levels, and some studies show correlation between regular mealtimes and serum lipids[xiii]. CM also recognizes these connections, and has long maintained that dietary habits have significant effects on health. The following are some basic principles of eating according to CM.

**Eat Meals at Regular Times**
CM emphasizes that eating breakfast, lunch, and dinner at roughly the same time each day is an important part of maintaining healthy digestion. Irregular mealtimes disrupt the body's biological clock and damage the Spleen and Stomach. When the body's biological clock is in order, it prepares the Spleen and Stomach for meals that are due to arrive at regular times of the day. When food arrives on time, digestion takes place normally and efficiently. If the food does not arrive, or arrives at different times each day, the body never knows when to prepare the digestive system for food, and digestion suffers. In regards to serum lipids, at least one modern study shows irregular mealtimes can cause an increase in serum lipid levels.[xiv]

**Do Not Overeat**
Chinese medicine generally states that one should eat until 70% full. This means people should stop eating at the point when they feel they can still eat a bit more before feeling full. Eating until feeling full or stuffed overburdens and damages the Spleen. In particular, one should avoid overeating in the evening.

**Do Not Eat Dinner Too Close to Bedtime**
When digestion is healthy, it is best to eat dinner no later than three hours before bedtime. If digestion is poor, this should be extended to four hours. Eating dinner too close to bedtime deprives the Spleen and Stomach of enough time to digest before sleep, thus impairing their ability to rest and rejuvenate during sleep. Research shows that eating rich and/or difficult to digest foods too late in the evening can promote the deposit of triglycerides on the arterial walls and accelerate the development of arteriosclerosis.[xv] Therefore, it is advisable to eat dinner relatively early, and avoid rich and difficult to digest foods at this time.

**Guidelines for Breakfast, Lunch, and Dinner**
*Breakfast*

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In the morning, the Spleen and Stomach are just waking up, and digestive function is a bit weak. At this time it is best to eat foods which are easy to digest and which promote rather than impair Spleen and Stomach function. The Spleen and Stomach prefer foods which are warm and cooked as these are easier to digest. This means one should generally avoid cold and raw food and drinks, especially at this time. Therefore, cold beverages such as refrigerated milk and juices, which are popular breakfast drinks in the West, should be avoided, as should breakfast cereal with cold milk. While it is necessary to eat a nutritious breakfast, it is important not to overeat at breakfast due to the weak state of digestion at this time of day. However, if easy to digest foods are prepared, and digestion is generally strong, one can eat a hearty breakfast without a problem. This is especially true for people who are physically active and require more nutrition for their daily activities.

*Lunch*
At this time Spleen and Stomach function are quite strong, and a good-size meal can be taken. Of course overeating is still not recommended.

*Dinner*
As mentioned above, dinner should be taken early. Overeating, and rich and difficult to digest foods should be avoided as these can affect the quality of sleep and the ability of the Spleen and Stomach to rest and recuperate during sleep, leading to impairment and weakening of digestive function.

**General Dietary Considerations**
1. *Avoid Trans Fatty Acids.* Trans fatty acids (trans fats) are the result of the partial-hydrogenation processing of liquid unsaturated fatty acids. This process eliminates the *cis*-confuguration present in unsaturated fatty acids, which is crucial for the chemical reactions that fatty acids are involved in as a component of the cellular membrane. When ingested, trans fats are incorporated into the cellular membrane, where due to their lack of *cis*-configuration they interfere with proper cellular function. Furthermore, trans fat consumption has been shown to increase the levels of small-particle LDL, which has more atherogenic potential than large-particle LDL. Trans fats have been implicated in a large number of illnesses by modern research, including heart disease (by raising the levels of atherogenic lipoprotein-a (Lp(a)), cancer, diabetes, asthma, impaired immune function, obesity, impaired development and growth, reproductive dysfunction, and impaired lactation, to name a few.

While we are often warned of the dangers of saturated fats, such as those found in butter, meat-fat, and tropical oils, these fats are in fact necessary and beneficial for human health, and should not be put in the same category as trans fats, which have no beneficial effects and cause harm. One study, the AJCN trans-fat study[xvi], showed a butter-rich diet (saturated fat diet) led to high levels of LDL, but the LDL particles were very large, and therefore less atherogenic. While Chinese medicine traditionally has no stance on this subject (since it is a relatively new subject), the majority of Chinese medicine physicians consider natural foods and traditional diets to be superior to processed foods and fad-

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diets. The former are time-tested, while the latter are experiments on human health, which are largely proving harmful.

2. *Restrict caloric intake.* Individuals who are overweight or suffer from elevated serum triglycerides should control daily caloric intake. For average working adults, a daily caloric intake of 1480 kcals is sufficient.[xvii] For physically active individuals, laborers, or athletes, this amount can be increased.

3. *Restrict sugar intake*. Carbohydrates such as sucrose and fructose have a definite effect on serum triglyceride levels. Research shows that substitution of sucrose in place of starch in the diet of animals leads to increased serum cholesterol and triglycerides. Furthermore, in countries and areas where fat intake is relatively high, subsequent increase of sugar intake increases the incidence of coronary artery disease.[xviii]

4. *Eat a wide variety of foods, avoid fastidious eating.* In order to receive adequate amounts of vitamins and trace elements it is important to eat a wide variety of foods. Vitamins C, B6, and B12 help prevent and treat hyperlipidemia and CAD. Whole grains, stalk vegetables, and nuts contain manganese and chromium, which can help prevent arteriosclerosis. Iodine can help prevent accumulation of lipids on arterial walls, so eating seaweeds can help prevent CAD. Garlic and onions can reduce serum lipids. Therefore, it is imperative to avoid fastidious eating and/or over-consumption of refined foods, both of which may deprive the body of important nutrients.

5. *Grains should be the staple of the diet*. Grains are suitable to be the bulk of the diet. All kinds of grains are good, however corn, millet, oats, rice, and wheat are considered best for dyslipidemia patients.

6. *Eat more sea fish.* Sea fish are rich in EPA and DHA. DHA has been shown to reduce serum lipids, and protect the cardiovascular and nervous systems.

7. *Eat high quality proteins that are low in cholesterol.* Eating fish (especially sea fish), beans and bean products such as tofu, poultry, lean meat, and milk can increase intake of high quality protein without significantly increasing serum cholesterol.

8. *Eat more fresh fruits and vegetables.* Fresh fruits and vegetables contain relatively large amounts of vitamins, minerals and other important nutrients. The fiber also helps digestion and elimination.

9. *Eat more shitake and oyster mushrooms.* Shitake mushrooms are an excellent source of amino acids, vegetable proteins, iron, thiamine (vitamin B1), riboflavin (vitamin B2), niacin, and vitamins B6, B12, and D2. Shitake also contains chitin, eritadenine, and lentinacin, all of which have been shown to lower serum cholesterol. 3 to 4 pieces of shitake contain approximately 100mg of lentinacin. Oyster mushrooms also contain some of these compounds and have been shown to have lipid-lowering effects.

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10. *Eat more nuts.* A variety of nuts have been shown to improve serum lipid profiles, reducing LDL and increasing HDL. These include pecans, almonds, walnuts, hazelnuts, peanuts, and pistachios. Recent studies show macadamia nuts also reduce plasma total and LDL cholesterol levels. Fresh, raw nuts are preferable, but they must be chewed very well. 1 to 1.5 ounces per day is a suitable amount.


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# *Related Online Courses*

## High Cholesterol Part 1: Western Medicine

This is Part One of a three part series on hyperlipidemia (dyslipidemia). Part One focuses on western medicine, including pathophysiology, serum lipid levels, determining risk, etc. Part Two focuses on the Chinese Medicine Theoretical Principles of dyslipidemia and prepares the reader for Part Three. Part Three focuses on Chinese Medicine Prevention and Treatment of dyslipidemia. The combined series empowers nurses with an in-depth understanding of dyslipidemia and with tools such as lifestyle practices, food therapies, and simple herbal remedies, to prevent and treat this disorder safely and effectively.

Course Outline for Part 1:
Introduction
1. Dyslipidemia in Western Medicine
1.1 Definition
1.2 Prevalence
1.3 Pathophysiology
1.4 Signs and Symptoms
1.5 Description of Lipoproteins
1.6 Serum Lipid Levels
1.7 Determining Risk
1.8 Therapeutic Options
1.9 Non-Mainstream Ideas about Cholesterol and Dyslipidemia

## High Cholesterol Part 3: Chinese Medicine Dietetics

This is Part Three of a three part series on hyperlipidemia (dyslipidemia). Part One details western medicine and hyperlipidemia. Part Two focuses on the Chinese Medicine Theoretical Principles of dyslipidemia and prepares the reader for Part Three. Part Three focuses on Chinese Medicine Prevention and Treatment of dyslipidemia, including practical and in-depth discussions of lifestyle practices, dietary therapies, and simple herbal remedies. Please note that Part Two is prerequisite to understanding the treatment principles in Part Three. The combined


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series empowers nurses with an in-depth understanding of dyslipidemia and the tools necessary to prevent and treat this disorder safely and effectively.

Course Outline for Pt. 3: Chinese Medicine Dietetics::
3. Prevention & Treatment of Dyslipidemia in Chinese Medicine
3.1 Lifestyle
3.1.1 Sleep Hygiene
3.1.2 Elimination
3.1.3 Dietary Habits
3.2 Food Therapy
3.2.1 Individual Foods
3.2.2 Lipid-Reducing Food Formulas
1. Teas
2. Congees
3. Soups
Conclusion

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