

# 709 Research

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## Gout – Chinese Medicated Diet Treatment

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8/10/2011

**Abstract:** This paper is part of the research project which introduced Chinese Medicated Diet as health prevention and assisting treatment for various disease conditions. The overall project includes an information website and an introduction seminar with selected disease topics. Gout is one of the disease topics. Gout is a common disease which is painful and annoying but it is not life threatening. For those who prefer to minimize exposure to pharmaceutical drug, there is an option to do so with this disease. This paper introduces the simple concepts of Chinese Medicine Theory, its application on food as assisting treatment of disease using Gout as an example for those who are interested to take an active role in disease recovery and prevention. The ultimate objective is for public education.

## Table of Contents

1.0	Introduction .....	3
2.0	Chinese Medicine Theory on Food .....	4
3.	The disease - Gout .....	7
3.1	Western Treatment.....	8
3.2	Chinese Medicine Theory on Gout .....	10
4.	Diet Therapy.....	12
4.1	General Recommendation.....	13
4.2	Incorporating TCM Food Therapy.....	14
5.	References .....	17
Figure 1	Gout .....	7
Figure 2	Tophi .....	7
Figure 3	Urate Crystal .....	8
Figure 4	Gout due to Wind Damp Heat Bi .....	10
Figure 5	Gout due to Phlegm and Blood Stasis Obstruction.....	10
Figure 6	Gout due to spleen deficiency with damp turbid .....	11
Table 1	Examples of Yin and Yang classification .....	4
Table 2	Examples of food according to hot and cold nature .....	5
Table 3	Basic characteristics of 5 elements .....	6

## 1.0 Introduction

Food is a very important component of life. Its basic function is to provide the source of energy for our daily activities. We get pleasures, enjoyment and even comfort out of it. However, in modern society, no one has time to cook and enjoy a meal. We gobble up our meal in 10 minutes, eat as we go, or even skip meal to catch up in this fast paste society. We fill our life with stress and anxiety to chase after career, money, power and love as accomplishments. Then we abuse our body with food, alcohol, excessive sex as stress reliever. When we realized the strain to our body, we use botox, nip and tuck to reverse the appearance.

Rooted in Chinese culture is the concept of “healing food”. Food and medicine are considered to be equally important in preventing and curing diseases. Written more than 2000 years ago, the Inner Cannon of Yellow Emperor, an ancient Chinese medical text, already states:

“Overindulgence in salty food will coagulate the blood circulation and will change the color of the blood. Overindulgence in bitter food will cause the skin to become shriveled and dry and the body hair to fall out. Overindulgence in pungent food can cause spasms, tremors, and poor nails. Overly excessive consumption of sour foods can make the skin rough, thick, and wrinkled, and cause the lips to become shriveled. Overindulgence in sweets will cause pain in the bones and hair loss. All these symptoms and conditions are a result of overindulgence of the five flavors.”

The concept of food being the root of our health problem as well as the cure put back the control of our own health in our hands instead of the medical doctor. To achieving optimal health, we not only need to balance our diet, we also need to focus on prevention. As Chinese Medicine doctor, our goal is to improve health via treatment and promote health via education. This becomes the focus of our research project. As quoted in the Chinese proverbs, “The Superior doctor prevents illness, the mediocre doctor cures imminent illness, the inferior doctor treats illness.” The vision is to provide information source for the public to manage their own health and become their own “superior doctor” via daily food management.

The scope of the project includes:

1. A web site with reference information and recipes
2. A seminar to introduce the concept

The potential outcome of this research project can be further developed into a Traditional Chinese Medicine interest group for health promotion and recipe reference source for daily cooking.

This paper focuses on one of the 5 diseases presented in the seminar. Details of the planning and preparations are omitted with a summary at the end for lesson learnt after the seminar as an overall assessment to the project.

## 2.0 Chinese Medicine Theory on Food

Chinese medicated diet is actually a modality of Traditional Chinese Medicine. It uses the same principles and diagnosis as acupuncture and Chinese herbal medicine. A famous fourteenth-century physician described, “Doctors first have to find the cause for an illness and determine which disharmony prevails. TO balance this disharmony, the first and foremost measure is appropriate diet. It is not until this measure bears no results that one should use medicines.” Medicated diet is an important step in disease prevention.

Diet therapy is a broad term for the practical application of nutrition as a preventative or corrective treatment of disease. This usually involves the modification of an existing dietary lifestyle to promote optimum health. Similar to western nutrition but Chinese Medicated Diet Theory is more of a system and black box approach. Rather than focus on individual trace elements intake, it focus on the body as a whole and how to balance it. In other words, there is no good or bad food but only excess or insufficiency of food type based on their nature. From the ancient text, there are four aspects to Chinese medicated diet:

1. nourish and preserve life
2. disease recovery and disease assistant therapy
3. diet control
4. Contraindication

All aspects comprised as the scope of Chinese medicated diet. In Chinese medicine theory, human and the universe are connected and the law of nature governs both the universe and our body. The theories of yin yang and five elements are the fundamental laws that govern the interrelationship of our internal system. The following is a short introduction to the basic characteristics of food nature based on Chinese medicine theory. The key to healthy living and healthy eating is balance. Simply put, to achieve balance, one would eat a variety of food and choose the food that your body need.

Yin Yang Theory            “The principle of Yin and Yang is the foundation of the entire universe.”

Without getting too much into philosophy, Yin and Yang represents 2 opposite natures and properties. It is a concept of relativity. All things and phenomena can be categorized into either yin or yang nature. Yang represents radical change, outward, ascension, warmth and brightness. Yin represents stillness, inward, descent, coldness and dimness. The following table illustrates the concept of yin and yang:

**Table 1** Examples of Yin and Yang classification

	Yin	Yang
Nature	Moon	Sun
Environment	Dark	Light
Motion	Down	Up
Temperature	Cold	Hot
Season	Autumn, winter	Spring, Summer
Form	Structure	Function
State	Deficiency	Excess

In application to food, yin and yang represent hot and cold nature of the food. Hot and Cold nature of the food is referring to the effect to the body after consumption. Too much yin food will cause the body to produce only yin energy resulting in slow movement, feeling of chilled and low energy. Too much yang food will cause the body to produce only yang energy resulting in fast, hot and aggressiveness. Consumption of food also needs to align with season and weather to achieve to balance with the environment as well. In winter time one should consume more yang food and in summer time yin food. Understanding the basic nature of heat and cold can help us balance the internal state of our body. There is also various degree of hot and cold and they sometimes are conveniently classified as warm, neutral and cool. Examples for hot to cold food are listed as follow:

**Table 2** Examples of food according to hot and cold nature

Cold	Cool	Neutral	Warm	Hot
Bamboo Shoot	Apple	Broccoli	Brown sugar	Black pepper
Banana	Barley	Beef	Chicken	Cinnamon bark
Clams	Tofu	Carrot	Fennel	Ginger
Crab	Chicken egg	Peanut	Garlic	Green pepper
Lettuce	Eggplant	White Sugar	Green onion	Red pepper
Kelp	Wheat	Mushroom	Shrimp	Soybean oil
Seaweed	Celery	Pork	Chives	Alcohol
Sugar Cane	Spinach	Rice	Ginseng	Lamb
Watermelon	Mung Bean	Sweet potato	Raspberry	Curry

The second aspect of yin yang theory in application to food is excess and deficiency. Excess condition can be assisted by food that help control or counterbalance the abnormal condition. Examples are food that helps promote digestion, promote urination, clear heat or purging. Similarly, deficiency can be helped with food that tonify and nourish the body.

### 5 elements Theory

Five elements theory is another import concept in understanding the nature of food or more broadly speaking the Chinese medicine theory. The five elements represent natural phenomena that were indispensable for maintenance of life and production, as well as modeling the human body. They are Wood, fire, earth, metal and water. The characteristics of the five elements represent the physiological functions of the five organ functions in human body as well as the mutual relationship among them. In application to food nature, it represents 5 different flavors and colors. They draw affinity to the corresponding organ function in the human body.

#### 1. Wood

Wood has the characteristics of growth and flourishes with flex and extension. It is associated with the liver. Its taste is sour indicating astringent and gathering. Excessive sour flavors damage muscle tone. The associated color is green.

#### 2. Fire

Fire has the characteristics of heat and rising nature. It is associated with the heart. Its taste is bitter indicating drying and strengthening. Excessive bitter food causes dryness. The associated color is red.

3. Earth

Earth has the characteristics of nurturing and supporting. It is associated with the spleen. Its taste is sweet indicating harmonizing and retarding. Excessive sweet food can create dampness resulting in obesity and weakness of connective tissue. The associated color is yellow.

4. Metal

Metal has the characteristics of clean and lowering. It is associated with the lung. Its taste is pungent and aromatic indicating dispersing. Excessive pungent flavor irritates the skin. The associated color is white.

5. Water

Water has the characteristics of cold and moistening. It is associated with the kidney. Its taste is salty indicating softening. Excessive salty flavor damages fluid and bone. The associated color is black.

**Table 3 Basic characteristics of 5 elements**

	Wood	Fire	Earth	Metal	Water
Characteristics	Growth	Heat	nurturing	Clean, dry	Cold, moist
Direction	Inward	rising	Storage, holding	outward	downward
Organ	Liver	Heart	Spleen	Lung	Kidney
Flavor	Sour	Bitter	Sweet	Pungent	Salty
Color	Green	Red	Yellow	White	Black
Effect	Astringent	dry	tonify	disperse	Soften
Side-effect	Make phlegm worst	Injure spleen/yin	Create dampness	Injure yin	Injure fluid

While the 5 elements theory in Chinese medicine is a lot more complicated including detail organ theory, the basic principle using color and flavor can be used simply as guidance for food selection in diet therapy. More specifically, each taste has a functional effect, and these effects are taken into account when recommending foods or types of food. Sour-tasting foods have the function of constraining sweating, stopping cough, and relieving diarrhea. Bitter foods have the function of causing Qi to flow downwards, drying dampness, expelling toxicity, purging fire, and clearing heat. Sweet foods have the function of harmonizing and tonifying, and relieving both pain and spasms. Pungent foods have the function of dispersing, moving Qi, and invigorating Blood. Salty foods soften masses and nourish both Blood and Yin. In addition to the traditional five tastes, there is a category of "aromatic" foods such as mint and cilantro. These have the function of moving Qi, expelling dampness, strengthening the Spleen, increasing the appetite, clearing the mind, and enhancing the spirit. Color is another aspect which draws affinity to the organs and food can be selected based on color as health reinforcement. For example, black color food tonifies the kidney and white color food benefits the lung. Table 3 summarizes the characteristics of 5 elements. It is a good idea to choose food that has a variety of color, which are pleasing to the eyes and benefit the body.

### 3. The disease - Gout

Gout is a complex form of arthritis, also known as metabolic arthritis. It is a medical condition characterized by sudden, severe pain attack of the joints. It is also the most common form of acute inflammatory arthritis in men over 40 years of age. The classic symptoms include abrupt, burning pain, hot, red, swollen, tender, and stiffness, usually in a single joint in the lower extremities. The most common location is at the base of the big toe, but it can occur elsewhere in the body, including the joints and surrounding areas of the foot, ankle, or knee. If left untreated, it can lead to joint damage.

#### Cause

Gout is caused by an accumulation of uric acid crystals (urate) depositing in the tissue of the body. Uric acid is a by-product of purines being metabolized and is normally dissolved in the blood stream. Normally one third is excreted through bowel and two thirds through kidney. Hyperuricemia develops when the body overproduces uric acid (10-15% of gout patient) or the kidney underexcretes the acid (80-90% of gout patients). Hyperuricemia over an extended period of time results in formation of crystal. Normal range of uric acid is 4.3 to 8.0 mg/dl for men and 2.5 to 6.0 mg/dl for women. Any value above the upper limit of normal indicates hyperuricemia and potential for gout arthritis. Urate is a needle like crystals which tear into the synovial capsule and cartilage between joints. The immune system sees it as foreign body and responded with white blood cell causing inflammation.

#### Stages

There are four stages of this disease:

1. Asymptomatic Hyperuricemia  
Mild hyperuricemia usually does no harm. Most people with hyperuricemia never develop gout. It is not a disease but rather a risk factor. No treatment is necessary.
2. Acute Gouty Arthritis  
Acute Gout flare-up can last a few days or as long as several weeks. It can occur without a specific cause, and can also be brought on by excessive weight gain, medications, alcohol or eating large amount of high purine food. The pain is intense and throbbing, and there is heat dissipating from the swollen or inflamed area. The color of the inflamed area is red and possible chills or fever appears. It can also accompany with fatigue, headache and loss of appetite.
3. Symptom-free intervals between acute attacks  
These intervals can be from 6 months to 2 years. It can be lapses up to 10 years.
4. Chronic tophaceous gout with smothering joint pain, stiffness and impair function  
There is recurring episodes of joint pain and swelling resulting in tissue damage and loss of function. Some will experience episodes of urate kidney stones, serious impairment of kidney function, or the development of tophi - localized deposits of urate crystal in the skin, on earlobes, or on tendons near joints.



Figure 1 Gout



Figure 2 Tophi

## Diagnosis

Gout is suspected when the patient complains about recurrent painful arthritis particularly at the base of the toes. The most common test is blood test for Serum Uric Acid (SUA) level. There is no indication for people without symptoms of gout. The most reliable test for gout is Joint Fluid test obtained by joint aspiration (arthrocentesis). Arthrocentesis is a common office procedure performed under local anesthesia. Fluid withdrawn from the inflamed joint using a syringe and needle are analyzed under microscope for uric acid crystal. Shiny needle-like crystals are best viewed with special polarizing microscope. X-rays sometimes can be helpful to show bone damage as a result of repeated bouts of inflammation. It can also be helpful for monitoring the effects of chronic gout on the joints.



Figure 3 Urate Crystal

## Risk Factor

Approximately 5 million people in the United States suffer from gout. Its prevalence doubled over the last 20 years. The known risk factors for developing gout include:

- Family history of gout
- Male gender
- Over 40 years of age
- Obesity
- Alcohol abuse
- Hypertension
- Impaired kidney function
- Certain drugs such as thiazide diuretics, low-dose aspirin, niacin, cyclosporine, tuberculosis medication, etc
- Leukemias, lymphomas

No one dies from gout but it is closely linked to hypertriglyceridemia, low HDL-cholesterol, insulin resistance, obesity, hypertension which kills millions.

### **3.1 Western Treatment**

Generally, most gout pain is treatable, but if left untreated, it can cause major damage to the organs and to the joints. There are two key steps to treat gout:

1. Stop the acute inflammation of joints affected by gouty arthritis.
2. Long term management to prevent future attacks.

#### Acute – stop Inflammation

During acute attack, the medication is focus to reduce inflammation. There are 3 groups of medications that can be used:

1. NSAIDs are a non-steroidal anti-inflammatory drug which help to reduce inflammation and uric acid crystal build up. Indomethacin (Indocid), Ibuprofen and Naproxen are the most commonly

prescribed NSAIDs. These are commonly used pain killer but they are a major cause for stomach ulcers. They can also cause gastrointestinal side effects and bleeding.

2. Corticosteroids are a very strong anti-inflammatory hormone which is taken orally or injected in the Gout affected joint. The injection process can be very painful. Prednisone is the most commonly prescribed. Short term side effect includes insomnia, euphoria, mood change and depression. Long term side effect can weaken immune system, lower bone density, diabetes, glaucoma and cataracts etc. and is discouraged.
3. Colchicine has a very narrow therapeutic toxic ratio and is used only when NSAIDs and Corticosteroid are not effective. It must be started in the first 24 hours of the attack. There are GI upset in 80% of the cases causing nausea, vomit, cramp and diarrhea. Other side effects are bone marrow suppression, renal failure, congestive heart failure and death.

### Long Term Management – lower urate

Gout is a chronic disease with recurring attacks. Prevent future attack is an important element for treatment. Prevention of acute gout attack involves maintaining adequate fluid intake, weight reduction, dietary changes, reduction in alcohol consumption and medications to help lower the uric acid level in the blood.

Medications used in between attack aims to manage the chronic underlying metabolic derangement that causes hyperuricemia and gout. Medicines used to lower blood uric acid level work by:

1. Increasing the kidney's excretion of uric acid  
Probenecid (Benemid) and sulfinpyrazone (Ariturane) are medications that are commonly used to decrease uric acid blood levels by increasing the excretion of uric acid into the urine. It is for limited use as it required good renal function.
2. Decreasing the body's production of uric acid from the purines in foods  
Allopurinol lowers the blood uric acid level by preventing uric acid production. It blocks the metabolic conversion from purines in foods to uric acid. However, 3-10% population has pruritic papular rash. Other side effects include GI upset, macular or vascular rash, myelo-suppression, hepatitis and alopecia, etc. It also prolongs half life of Coumadin, Vidarabine, Cyclosporin, Azathioprine which then increase the toxicity.

These medicines are generally not started until after the inflammation from acute gouty arthritis has subsided because they can worsen the attack. If they are already being taken prior to the attack, they are continued and only adjusted after the attack has resolved.

Diet and life style change is equally important for long term management to reduce uric acid level in the blood. American Dietetic Association recommended the following for gout diet:

- 8-16 Cups (2-4 l) of fluid each day, at least half water
- Avoid alcohol
- Eat a moderate amount of protein, prefer low fat or fat free dairy, tofu, eggs and nut butter
- Limit daily intake of meat, fish and poultry to 4-6 ounces (114-170g)

Maintaining adequate fluid intake helps prevent acute gout attacks. Adequate fluid intake also decreases the risk of kidney stone formation in patients with gout. Alcohol is known to have diuretic effects that can contribute to dehydration and precipitate acute gout attacks. Alcohol can also affect uric acid metabolism to cause hyperuricemia. Therefore, alcohol has two major effects that worsen gout by impeding the excretion of uric acid from the kidneys as well as causing dehydration, both of which contribute to the precipitation of uric acid crystals in the joints.

### 3.2 Chinese Medicine Theory on Gout

In Traditional Chinese Medicine, Gout is “Tong Feng” which means pain moving like wind. It is classified as “Bi” syndrome. “Bi” syndrome is pain due to obstruction of qi and blood in the body. The obstruction is from turbid dampness which is a result of spleen deficiency or kidney deficiency. Spleen is the organ responsible for transportation and transformation of food essence. Dysfunction of the spleen will result in phlegm damp accumulating. Kidney is responsible for water metabolism. If kidney is dysfunction, it cannot separate clear from turbid water resulting in water damp accumulate in the body. The acute attack is often triggered by weather, excessive rich and greasy food, excessive alcohol intake, or even exertion from exercise. It is like a stream collecting debris overtime and slowly creating pockets of dead water. The obstruction may be triggered by a wind storm or sometimes by only a piece of rock in the wrong place. The debris then rots and generates heat which further putrefies the accumulation and became turbid swamp land. Urate is analogous to turbid dampness which settled in the joints; obstruct normal qi and blood flow causing pain.

There are many TCM syndromes of Gout diagnosis. Treatment and food therapy are different in different patterns. They can be summarized as 3 most common patterns:

1. Wind Damp Heat Bi
2. Phlegm and blood stasis Obstruction
3. Spleen deficiency with damp turbid

#### Wind Damp Heat Bi

Clinical Manifestation: Acute attack, red, swollen, hot and painful joints, difficult to move, accompany with dry and bitter mouth, sometimes with fever

Tongue: Red, white or yellow greasy coating

Pulse: Strong Rapid wiry or slippery

Treatment Principle: Clear heat, eliminate dampness Turbid, dispel

Prescription: Wind, unblock channel, stop pain  
Fang Ji, Can Sha, Zhi Zi, Yi Ren, Lian Qiao, Chi Xiao  
Dou, Tu Fu Ling, Di Long, Ren Dong Teng each 10g  
Che Qian Zi 15g  
Upper Limb add Qin Jiao, Sang Zhi  
Lower Limb add Niu Xi, Wei Ling Xian



Figure 4 Gout due to Wind Damp Heat Bi

#### Phlegm and Blood Stasis Obstruction

Clinical Manifestation: Less acute, red swollen, hot, painful joint, difficult to move, accompany with headache, heavy body

Tongue: dark with petecchia, white or yellow thin greasy coating

Pulse: moderate choppy

Treatment Principle: Transform phlegm, eliminate dampness, dispel stasis, unblock channel, stop pain



Figure 5 Gout due to Phlegm and Blood Stasis Obstruction

Prescription: Tao Ren, Hong Hua, Dang Gui, Chuan Xiong, Chi Shao, Di Long, Bai Jie Zi, Wei Ling Xian, Wu Shao She each 10g, Chuan Shan Jia 6g Quan Jie 3g

### Spleen deficiency with damp turbid

Clinical Manifestation: Deformed joints, atrophy, recurrent attack and sharp pain accompany with headache, heavy body

Tongue: Pale thin white coating

Pulse: Moderate

Treatment Principle: Strengthen spleen, eliminate damp turbid, unblock channel, stop pain

Prescription: Shu Di, Shan Yao, Zao Pi, Fu Ling, Ze Xie, Tu Si Zi, Niu Xi, Tu fu Ling each 10g Fu Zi Rou Gui each 3g



Figure 6 Gout due to spleen deficiency with damp turbid

There are multiple treatment modalities in Traditional Chinese Medicine include Herbal Medicine, Tuina and Food Therapy. The above prescriptions recommended are for herbal medicine which aims to correct the imbalance identified by various syndromes. In Chinese medicine, herbal medicine is always combined with food therapy as food is being viewed as the same source as the herb. In the Compendium of Materia Medica, Chinese herbal medicine is classified as 3 categories: upper, middle and lower class. The upper class of medicine is the ideal medicine with no toxin and side effect. Its therapeutic effect is mild and is good for long term consumption. This class of medicine becomes common ingredients in the Chinese kitchen.

## 4. Diet Therapy

Throughout history, gout has been associated with rich foods and excessive alcohol consumption, a life style that could only be afforded by the rich and wealthy. It is referred to by many as “The disease of kings and the king of diseases.” Incidentally, purine is also high concentration in a lot of rich food especially high protein meat and meat product.

Traditionally, Gout is associated with high purine food intake as uric acid is the by-product of purine metabolism. By following the dietary guideline, one will lower the purines intake, which may then lower the small portion (15%) of the uric acid in the blood that comes from food or beverages. Lower urine intake is not likely to lower the uric acid concentration in your blood enough to treat the condition but it can certainly assist in reducing the frequency and severity of attack.

A study led by Dr. Hyon K. Choi reported in Mar 11, 2004 issue of the New England Journal of Medicine (ref. 1) offered interested insight into gout diet and food selection. Choi’s research team conducted a study over 12 year’s period following 47150 men with no prior history of gout. 730 men were diagnosed with gout after 12 years.

- Meat and seafood consumption are associated with an increase risk of gout
- Low fat dairy products can reduce the risks
- There is no increase risk associated with purine rich vegetables such as peas, beans, mushrooms, cauliflowers, spinach.
- Beer has higher risk in association with increase SUA level
- Overall protein intake has no effect
- Vitamin C is uricosuric

Contrary to traditional guideline, purine content alone is not the only factor. None the less, the study serves as further guidance for food selection in gout diet.

Gout is a metabolic disease that indicates uric acid metabolism controls in the body is not working. They are out of balance, and the only way one will get back in control is to eat a balanced diet. Simply avoiding purines is not sufficient as purine intake only counts for 15% of the uric acid pool. Majority comes from individual’s internal activities. As the body grows and regenerates itself, it creates uric acid. Illness, trauma, and bad nutrition will cause this process to accelerate, and a badly balanced diet will send uric acid figures much higher than a plate of seafood ever could.

Alkalizing the body is another popular theory to ensure good health and well being. There is a direct relationship between the blood pH level and the crystallization of the uric acid, but the effect of various foods on human body is not directly related to the initial PH of the food. Fresh vegetables and fruits are highly alkalizing to the body. This can be beneficial and should be incorporated to the planning of a gout diet.

Obesity is also identified as one of the key factors relating to Gout. As a result weight loss; thereby control calorie intake is also one of the strategies in long term management of gout. Other influencing factor such as water intake and alcohol consumption is also part of the equation to control intake.

## 4.1 General Recommendation

As already recognized by medical expert, lifestyle change is a very important element of preventing recurring gout attack. It is also part of the long term management therapy currently being practiced although the exact science of the food groups is under debate. Nonetheless, the key to diet management is monitoring and balance. The focus for food therapy recommended by the western doctor is to control and reduce intake. They include reduce high purine food, reduce calorie intake for overweight individual and focus of food that alkalize the body.

### General recommendation

The mayo clinic recommended the following diet:

- **Limit animal protein.** Avoid or severely limit high-purine foods, including organ meats, such as liver, and herring, anchovies and mackerel. Red meat (beef, pork and lamb), fatty fish and seafood (tuna, shrimp, lobster and scallops) are associated with increased risk of gout. Because all animal protein contains purines, limit your intake to 4 to 6 ounces (113 to 170 grams) daily.
- **Eat more plant-based proteins.** You can increase your protein by including more plant-based sources, such as beans and legumes. This switch will also help you cut down on saturated fats, which may indirectly contribute to obesity and gout.
- **Limit or avoid alcohol.** Alcohol interferes with the elimination of uric acid from your body. Drinking beer, in particular, has been linked to gout attacks. If you're having an attack, avoid alcohol. However, when you're not having an attack, drinking one or two 5-ounce (148 milliliter) servings a day of wine is not likely to increase your risk.
- **Drink plenty of fluids, particularly water.** Fluids can help remove uric acid from your body. Aim for eight to 16 8-ounce (237 milliliter) glasses a day.
- **Choose low-fat or fat-free dairy products.** Some studies have shown that drinking skim or low-fat milk and eating foods made with them, such as yogurt, help reduce the risk of gout. Aim for adequate dairy intake of 16 to 24 fluid ounces (473 to 710 milliliters) daily.
- **Choose complex carbohydrates.** Eat more whole grains and fruits and vegetables and fewer refined carbohydrates, such as white bread, cakes and candy.
- **Limit or avoid sugar.** Too many sweets can leave you with no room for plant-based proteins and low-fat or fat-free dairy products — the foods you need to avoid gout. Sugary foods also tend to be high in calories, so they make it easier to eat more than you're likely to burn off. Although there's debate about whether sugar has a direct effect on uric acid levels, sweets are definitely linked to overweight and obesity.

Other recommendations include:

- Manage weight
- Reduce tea, coffee, spicy and greasy food
- During attack:
  - Avoid acidic food, carbonated drink
  - Avoid dehydration and crash diet
  - Do not take Asprin during attack
  - Avoid stress on attack site during the attack
  - Elevate the attack site above heart level to help drain body fluid and relieve pain

## 4.2 Incorporating TCM Food Therapy

The focus on western diet therapy is by avoidance therefore the recommendation is on limiting the intake of food that can potentially increase the uric acid in the body. Pharmaceutical products are used to eliminate the urea in the blood. TCM diet therapy followed the syndrome differentiation which is targeted at addressing the pathological accumulation. The focus will be on eliminating excess with food that clear damp heat and resolve phlegm or by strengthening the spleen to help eliminating the turbid. As an assisting therapy, TCM food therapy can add another dimension to the gout diet meal planning.

There are 3 most common syndromes and the corresponding food therapy are as follow:

1. Wind Damp Heat Bi – incorporate food that clear damp heat
2. Phlegm and blood stasis – incorporate food that resolve phlegm
3. Spleen deficiency with damp turbid – incorporate food that eliminate dampness and strengthen the spleen

In the analogy of the debris clogging the stream, by selecting food that helps clean up the corresponding type of debris, it dredge the body and get rid of obstruction. TCM diet therapy play a more active role in clearing the body and detoxification.

In the case of Gout disease, regardless of which syndrome, the main culprit is phlegm and dampness as a result of pathological product generated internally. Since food effect is mild as compare with herb and medication, there is more latitude in terms of identifying the exact syndrome. If unsure, consuming food that strengthens the spleen and eliminating turbid phlegm and dampness is always beneficial to the Gout sufferer.

In Chinese medicine, there a few ways to remove dampness and phlegm: aromatic disperse dampness, drain dampness by promoting urination, eliminate dampness by drying, or by warming and invigorating qi if it is cold phlegm, etc. In general, foods that eliminate dampness through urination are usually bland in flavor. Foods that dry dampness are usually bitter in flavor. As for strengthening the spleen, since spleen belong to the element of earth and yellow color food will help reinforce the spleen energy, thus help eliminate dampness and turbidity in the body. Spleen is an important organ to support food intake, other than selecting food that strengthen the spleen, we also should take steps to protect the spleen. Cold and raw food, spicy food, yang food, sugar and sweet as well as fatty food all can weaken the spleen and should be consumed in moderation.

Colchicine is a medication used for gout treatment. It has been around for about 2000 years. It is derived from dried seeds, or bulb, of the autumn crocus (meadow saffron) plant which is a crocus-type flower. The plant itself is very poisonous and there is no known antidote. Colchicine gout treatment works by stopping inflammation because it halts neutrophils from entering the inflamed area but it does not affect uric acid levels. It is effective when taken within 12 hours of a gout attack but it also has significant gastrointestinal side effect. It is no longer a first choice remedy. Interestingly, coichicine also occurred naturally in other food. Bai He and Lily flower are examples of food that have similar effect of colchicine and they are also good choice for gout diet during attack.

The following are samples list for gout diet food in various TCM categories. They are commonly used food group that can easily be adopted into daily meal plan. Included below are also sample gout meal plan for a typical day.

TCM Food Group

1. Food that eliminate dampness
  - Job's Tear – sweet, bland and slightly cold, promote urination, strengthen spleen, clear heat
  - Small Red Bean – sweet, sour and neutral, promote urination, detoxification, expel pus
  - Celery – cool, sweet and bitter, calm liver and clear heat, induce diuresis, treat hypertension
  - Ginger peel– pungent cool, regulate water, promote urination, harmonize stomach
  - Carp – neutral and sweet, induce diuretic, reduce edema, lower qi, promote lactation
  - Lily Flower – sweet, neutral, nourish blood, calm liver, promote urination, reduce swelling
  - Rice - warm and sweet, strengthen spleen and regulate stomach, invigorate qi, arrest diarrhea
  - Quail – neutral and sweet, clear damp heat, anti-diarrhea, treat joint pain of damp type
2. Food that clear damp heat
  - Winter melon – cool, sweet and bland, induce diuresis, clear phlegm, remove heat, detox
  - Corn silk – sweet, bland and neutral, promote urination, clear damp heat from liver and GB
  - Radish – cool, pungent and sweet, relieve food stagnation, clear phlegm heat, detoxification
  - Mung bean – cool and sweet, clear heat, induce diuresis, detoxification
  - Bitter melon – bitter and cold, clear heat, nourish blood, benefit qi, tonify spleen, nourish liver
  - Water melon – cold and sweet, clear summer heat, induce diuresis, relieve restlessness
  - Cucumber – sweet, sour and cool, clear heat, promote urination, detoxification, reduce swelling
  - Water chestnut – sweet and cold, clear heat, stop thirst, eliminate dampness, transform phlegm
3. Food that resolve phlegm
  - Kun Bu – salty and cold, reduce phlegm, soften hardness, promote urination, reduce swelling
  - Hai Zao – bitter, salty, cold, reduce phlegm, soften hardness, promote urination, reduce swelling
  - Gingko – sweet, bitter, astringe, expel phlegm, stop cough, eliminate damp, stop discharge
  - Licorice Root – sweet and neutral, tonify spleen and heart qi, resolve phlegm
  - Pear – cool, sweet and slightly sour, clear heat, relieve phlegm, generate body fluid
  - Clam – salty and cold, nourish yin, promote urination, transform phlegm, soften hardness
  - Tangerine Peel – pungent, bitter, warm, aromatic, regulate qi, dry dampness, transform phlegm
  - Kumquat – warm, sweet, sour, pungent, regulate qi, transform phlegm, generate fluid
4. Food that strengthen Spleen
  - Shao Yao – neutral and sweet, strengthen spleen, tonify lung, reinforce kidney, treat diarrhea
  - Bian Dou – sweet and neutral, benefit qi, nourish yin, tonify spleen, treat diarrhea
  - Carrot – neutral and sweet, relieve food stagnation, strengthen spleen, treat maldigestion
  - Apple – cool and sweet, promote production of body fluid, promote activity of stomach
  - Lotus Seed – sweet astringe and neutral, tonify spleen, stop diarrhea, bind essence & clam spirit
  - Soy Bean – neutral and sweet, strengthen spleen, relieve epigastric distention, induce diuresis
  - Rice – warm and sweet, strengthen spleen and regulate stomach, invigorate qi, arrest diarrhea
  - Licorice Root – sweet and neutral, tonify spleen and heart qi, resolve phlegm

Sample meal plan

1. Western Diet (ref: <http://www.mealplansite.com/medical-gout.aspx>)

Breakfast	Cornflakes or Rice Krispies + 200ml skimmed milk + 1 tsp sugar 1 slice wholemeal bread toasted + olive-oil based spread Mug weak tea / coffee
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Mid-morning	2-3 rye crispbread Item fruit Drink water
Lunch	Sandwich: Wholemeal bread + olive oil-based spread + thin slice chicken/turkey/ham <i>or</i> peanut butter Mixed salad Fruit salad Drink water
Mid-afternoon	2-3 rye crispbread Item fruit Drink water
Evening Meal	Small chicken breast <i>or</i> small fillet white fish <i>or</i> small portion lean meat basmati rice <i>or</i> wholewheat pasta <i>or</i> potatoes / sweet potatoes Carrots, broccoli, cauliflower Drink water
Evening	2-3 plain biscuits Item fruit Drink water
2. Chinese Diet	(ref: <a href="http://shenbing.aliyiyao.com/sbkfhl/sbsl/27283.html">http://shenbing.aliyiyao.com/sbkfhl/sbsl/27283.html</a> )
Breakfast	Congee 50g Milk 250g Chinese Bun 50g Pickled Cucumber 100g
Lunch	Rice or Noodle 100g Stir fry pork and reddish (pork 75g raddish100g black fungus 5g) Stir Fry cabbage (150g)
Dinner	Red Date Congee (15g Dates 500g Rice) Chinese Bun 50g Zucchini Omelet (150g Zuchinni 50g egg) Vinegar potato threads (200g potato)

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