



# ASTRAGALUS

## Astragalus membranaceus

*"Astragalus builds up the protective chi. Imagine that there is a protective shield around your body, just below the surface of the skin, that keep out cold and other external influences. It vitalizes the non-specific immune defenses and wards off infections. This is the protective chi, and astragalus is the premier herb in Chinese herbalism to strengthen it."*

*-Paul Bergner,  
Director of the North American  
Institute of Medical Herbalism*

**ASTRAGALUS IS** one of the 50 fundamental herbs described in Oriental medicine and is considered to be the supreme protector due to its ability to strengthen Wei Qi (equivalent to immune system). It is considered a nourishing qi tonic, especially for the lung qi and the spleen qi. It is a consolidating tonic and directs energy inward and gently upward. It is in a superior class of tonic herbs that are not the strongest, but work more slowly over the long-term.

<b>BOTANICAL NAME</b>	Astragalus membranaceus, Astragalus mongholicus	
<b>COMMON NAME</b>	Astragalus, Huang qi (China), Milk vetch, Radix astragali	
<b>FAMILY</b>	Fabaceae (pea)	
<b>PARTS USED</b>	Root	
<b>DIRECTION</b>	Ascending moving	
<b>FLAVOR</b>	Sweet	
<b>ENERGETICS</b>	Slightly warm	
<b>DOSE</b>	9-30 g/daily	
<b>ACTIONS</b>	Energy tonic Lung (Wei Chi) tonic Spleen tonic Immunomodulator Diuretic Hypotensive Antioxidant	Antiviral Hepatoprotective Mild cardiogenic Anti-diaphoretic Mildly adaptogenic

## HISTORY

Astragalus was first introduced in the ancient text Divine Husbandman's Classic of the Materia Medica by the founder of agriculture and Chinese civilization, Shen-nong Ben-cao Jing. It began widespread use in Western botanic practice during the contemporary American herbal renaissance. Now, it is one of the primary immune tonic herbs in the Western pharmacopoeia, and widely available throughout the United States.

Known in China as "huang-qi" which means "yellow leader."

**Huang** = **yellow** (yellow interior of the root)

**Qi** = **leader** (a superior tonic in Chinese medicine)

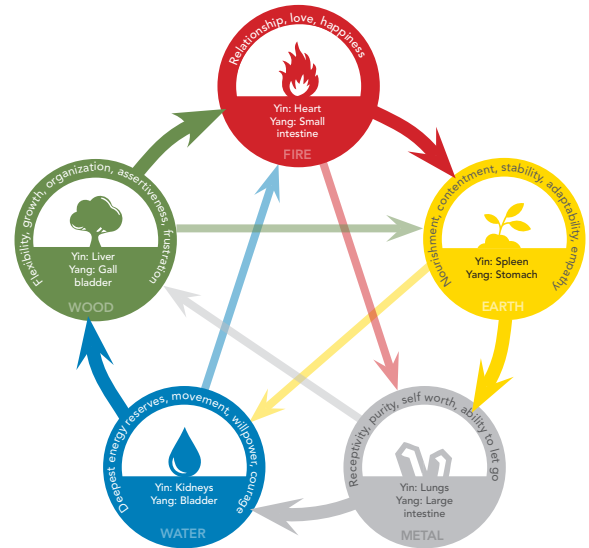
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## CONNECTION TO CHINESE FIVE ELEMENTS

In the Chinese 5 elements, yellow corresponds to the earth and to the spleen. The Earth is responsible for our feeling of contentment, stability, and feeling grounded.

Astragalus has a yellow root, is embedded in the earth, and tonifies the spleen.

Therefore, astragalus encourages the body and mind to have a strong foundation, achieve balance, and be in a good mood.



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## TRADITIONS AND USES

Traditionally, it has been used by people who worked outdoors, especially in the cold. It was used to enhance the immune system. It was also used to increase strength and stamina and decrease fatigue. It was a popular energy tonic and beneficial for younger people who tend to be more physically active.

Astragalus has been primarily an herb that has been decocted into food, typically in soups.

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## PREPARATIONS

**Medicinal stews and soups:** put 30 grams (generally 15-20 slices) in water and simmer for at least 1 hour.

**Decoction:** put 2-4 teaspoons of root into 1 cup of water, bring to a boil, and simmer for 10-15 minutes. Drink three times a day. (Hoffman)

**Tincture:** 4-8 ml three times a day (1:5 in 40%) (Hoffman)

**Capsules**

CULTIVATION

Astragalus is widely grown and cultivated.

Image to the right is of a 70-yr old farmer in Meichuan town, Minxian county, Northwest China’s Gansu Province on September 1, 2020. He has been growing Traditional Chinese Medicine for more than 30 years. He earns 70,000-80,000 yuan/year (about \$10,500/year).




PLANT PROFILE

Astragalus is a perennial plant with light yellow flowers that resemble peas or beans. It grows to approximately 24” and approximately 12-15” wide and can be found in full sun to partial shade areas of grassy regions, montain sides, or forest edges where there is well-drained sandy loam with normal to poor soils.


Astragalus is indigenous to northeast China, central Mongolia, Korea, and Siberia with cultivation mainly in China and Korea. The species can be grown in the NE. Astragalus is native to the temperate regions of the Northern hemisphere. There are more than 2,000 different species in the Astragalus genus. Astragalus membranaceus only current medicinal variety. Many other species are toxic.

Roots are harvested when the plant is at least 4 years old in the fall or early spring.


Lifespan



Full sun to partial shade




Well-drained sandy loam, normal to poor soils




Dry

USDA hardiness



24"



12-15"

Perennial

Full sun to partial shade

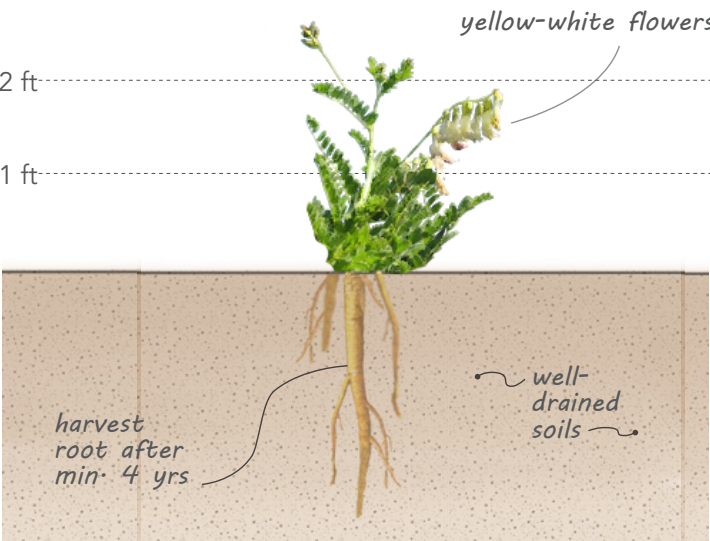
Well-drained sandy loam, normal to poor soils

Dry

Zones 5-9

24"

12-15"





## CHEMICAL CONSTITUENTS

### POLYSACCHARIDES

- Astragalans I, II, and III
- Polysaccharides AH-1, AH-2, Amon-S

### OTHER CONSTITUENTS

- Amino acids
- Choline
- Betaine
- Folic acid
- Palmitic acid
- n-hexadecanol
- B-sitosterol
- Daucosterol
- Coumarin
- Linoleic acid
- Coriolic acid
- Lupeol
- Lupenone
- Syringaresinol
- Lariciresinol
- 3-hydroxy-2-methylpyridine

### TRITERPENSAPONINS

- Astragaloside I, II, III, IV, V, VI, VII, VIII
- Acetylastragaloside I
- Isoastragaloside I, II
- Soyasaponin I
- Astramentbranin I, II
- Astragalus saponins A, B, C

### FLAVONOIDS

- Formononetin
- Formonoetin-7-O-B-D-glucoside
- calycosin
- Kumatakenin
- L-3 hydroxy-9-menthoxyptero-carpan, 7,2-dihydroxy-3
- 4-dimethoxyisoflavone-7-O-B-D-glucoside

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## USES W/MODERN MEDICINE

Many case studies have been performed to evaluate the efficacy of astragalus with positive results. A number of active compounds (such as glycosides, polysaccharides, flavone, amino acids, and flavonoids) extracted from Astragalus have demonstrated to have the potential to enhance cytotoxic effects and/or reduce side effects of chemotherapeutic agents (Lin).

One study entitled "Meta-Analysis of Astragalus-Containing Traditional Chinese Medicine Combined With Chemotherapy for Colorectal Cancer: Efficacy and Safety to Tumor Response" published in Frontier Oncology on August 13, 2019 written by Shuang Lin, Xiaoxia An, Yong Guo, Jianzhong Gu, Tian Xie, Qibiao Wu, and Xinbing Sui. Five clinical trials were designed using only Astragalus combined with chemotherapy and 17 were designed to use TCM containing Astragalus as the principal drug together with chemotherapy. The study showed that Astragalus-based product with chemotherapy improved quality of life of CRC patients when compared with chemotherapy treatment alone (Lin).

## SYSTEM AFFINITIES

Astragalus tonifies the **lungs** and **spleen** and augments the triple burner. In Traditional Chinese Medicine, astragalus enters the body through the spleen channel and the lung channel. Through both of these channels, it tonifies the triple burner, which is not an organ but a series of organs that carry out the balancing functions of the body. The triple burner governs the relationship between all the various organs and allocates chi between them.

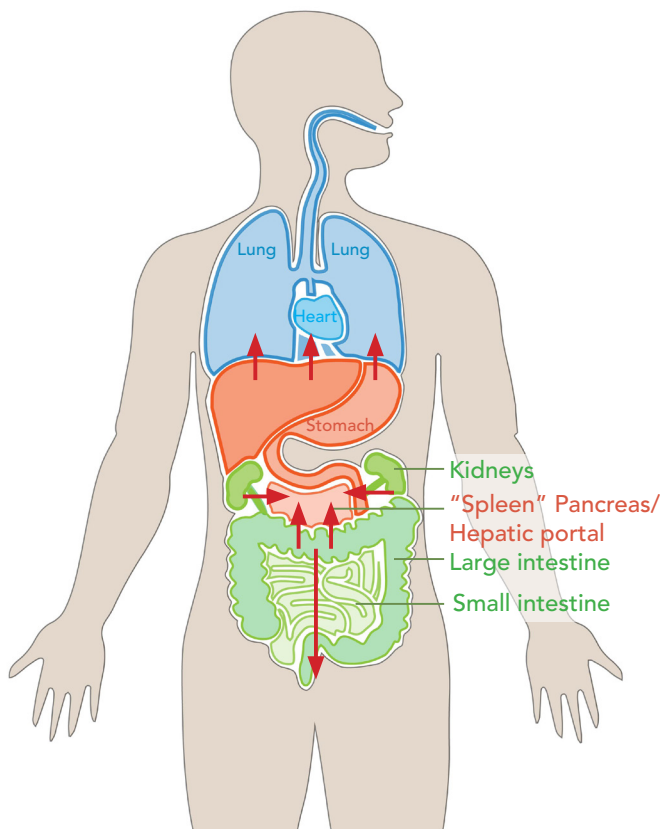
Astragalus tonifies the lungs where we experience the protective chi. It which regulates the chi throughout the body. It controls breathing and assists the heart with blood circulation. It regulates the nervous system, keeping balance between the body and mind and therefore serves as an adaptogen. It also regulates sweating.

The lungs is a yin organ so by balance, astragalus acts upon it's yang counterpart: the large intestine. The large intestine is responsible for elimination of toxins and communicates with the lungs to regulate transportation of functions in the body.

Astragalus also tonifies the spleen. The spleen enables nutrients to be transformed into food and assist in blood functions. Lifts prolapsed organs so lifting a prolapsed spleen alleviates symptoms such as diarrhea and fatigue.

Because the spleen is a yin organ, astragalus acts on the yang counterpart: the stomach which also enables nutrients to be absorbed into food and aid in blood functions. The spleen and stomach together are the foundation of digestive health.

So with the lungs in the upper burner, the large intestine in the lower burner, and the stomach and spleen in the middle burner, all three burners act in concert as the triple burner, which governs the relationship between all of the various organs and allocates the chi among them.



### UPPER BURNER

- Tonifies Wei Chi
- Tonifies blood
- Adaptogen
- Immunomodulator
- Anti-diaphoretic

### MIDDLE BURNER

- Digestion
- Hepatoprotective
- Lifts prolapsed organs

### LOWER BURNER

- Diuretic
- Reduce edema



## ACTIONS AND INDICATIONS

### IMMUNE TONIC AND IMMUNOMODULATOR

- Supreme Wei Qi tonic: strengthens protective qi. Potent immune tonic and mild immunomodulator (Mandelbaum)
  - Increases resistance to upper respiratory illnesses (ie. colds, flu)
  - Potentially builds immunity for people with autoimmune diseases
  - Increases immunity to fight chronic viral infections and chronic impaired immunity (ie. AIDS/HIV, hepatitis B, C)
  - Builds immunity to resist acute infections such as UTIs, GI infections, etc. (Mandelbaum)
- Tonifies the lungs and is used for frequent colds or shortness of breath.
- Depending on the combination of herbs, it may be used for excessive sweating associated with the qi, yang, or yin deficiency.
- Polysaccharides in astragalus intensify phagocytosis in reticuloendothelial systems, stimulate pituitary-adrenal cortical activity, and restore depleted red blood cell formation in bone marrow (Hoffman).
- Enhances cytotoxicity of NK cells, reverses tumor suppression of macrophages, increases macrophage and WBC count (Mandelbaum)
- Astragalus has been used in combination w/drug therapies to reduce toxicity and relieve side effects, to increase blood count to treatments w/steroids, anticancer drugs, and other therapies, and to prevent liver damage induced by anticancer drugs (Hoffman).

### SPLEEN

- Tonifies the spleen and raises the yang. Used for wide range of problems related to spleen qi deficiencies, including collapse of middle qi, lung qi and spleen qi deficiency, insufficiency of both qi and blood, and fever from qi deficiency.

### BLOOD

- Qi and blood tonic for post-partum recovery
- Qi and blood tonic for other blood deficiencies

### HEART

- Mild cardi tonic for angina pectoris – improves oxygen supply to heart muscle
- Mild cardi tonic for atherosclerosis, hyperlipidemia, hypertension

### LIVER SUPPORT

- Hepatoprotective: protects liver from damage, used in hepatitis protocols

## KIDNEY

- Used for reducing high blood sugar levels / diabetes and for some diabetic complications such as peripheral neuropathies
  - Mild diuretic: regulates water circulation and reduces edema and fluid retention
  - Mild renal tonic: nephritis and other nephropathy
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## CONTRAINDICATIONS, CAUTION, AND TOXICITY

- Generally considered safe when taken orally or intravenously.
- Not to use when actively sick and with a fever as it closes the pores.
- May be incompatible with immunosuppressive drugs (ie. cyclosporine, azathioprine, methotrexate) (Hoffman)
- Those individuals who may potentially have auto-immune diseases such as multiple sclerosis, systemic lupus erythematosus, or rheumatoid arthritis may experience immunostimulating effects.
- Overdosage may cause side effects such as headache, tightness in chest, insomnia, dizziness, flushing, and high blood pressure. Significant allergic reactions, including skin eruptions and pruitus at high doses (more than 30g) or injected. Anaphylactic shock has been reported following injections (Bensky, et. al).
- Consult physician if taking the following:
  - Antiviral medications
  - Immunosuppressant medications
  - Diabetic medications
  - High blood pressure medications
  - Diuretics
  - Anti-coagulant medications

*"Astragalus appears to strengthen both nonspecific and specific immunity. The conclusion drawn by most Western herbalists is that astragalus is an ideal remedy for anyone who is immunocompromised. It strengthens many functions of the immune system, helps protect the liver from damage, and may have valuable anticancer effects."*

*– David Hoffman, FNIMH, AHG,  
Medical Herbalism*

## ACTIONS AND INDICATIONS WITH HERB COMBINATIONS

*"It is in great repute as a tonic, pectoral, and diuretic medicine, the disease for which it is prescribed, therefore, are almost numberless."*

- G. A. Stuart  
*Chinese Materia Medica, 1911*

IN COMBINATION WITH	ACTIONS
Dong Quai	Improve blood circulation, Reduce high blood pressure
Ginseng	Build respiratory endurance, for general debility, reduced appetite, fatigue, spontaneous sweating due to qi deficiency
Atractylodes, Poria, Bupleurum	Tonifies Spleen Qi, Strengthen digestion and improve malabsorption, fatigue with low appetite
Reishi	Boost immune system
Ganoderma, Ligustrum, Codonopsis, Panax, Cordyceps, and Cornus	Chemotherapy support, Diabetes, Stimulates T-lymphocytes, macrophages, interferon
Codonopsis, Atractylus, Licorice root	Muscle and strength building
Cassia cinnamon, ginger, peony, Jujube dates	Relieve arthritic pain, numbness
Fu zheng remedy	Enhance efficacy of and decrease ADRs from chemotherapy and radiation, maintains healthy WBC count (also during steroid use)
Rehmannia, Huang bai	For night sweats due to yin deficiency.
Schisandra, Mai men dong	For night sweats.
Dong Quai, cinnamon bark	For flat sores that do not pustulate, or for ulcers that do not heal
Bai zhu	For weakness, lassitude, and loose stools associated with Spleen qi deficiency.



## PERSONAL EXPERIENCE

Astragalus is a superior tonic herb that teams well with other herbs. During the seasonal change from fall into winter, my constitution was very cold. Despite a winter coat in 50 degree weather, I could not feel warm and my body felt internally cold. After preparing an immunity boosting soup from Kamwo - a soup mix that contained many Chinese ingredients including ginseng, jujube dates, and astragalus - my body began to feel nourished and warm. I continued making additional soups and broth and began combining astragalus decoctions into my teas. I also started incorporating astragalus powder into baked goods and smoothies. With continued use, my body felt energized, balanced, and warm. My favorite drink that made me feel most nourished, calm, and warm was the astragalus chai with oatmilk that I drank nearly everyday throughout winter.

Astragalus is generally a food herb. My preparations mostly involved decocting the herb. For soups, I boiled the sliced root along with other herbs in water and simmer for at least an hour. The root was removed before consuming. For teas, I decocted the herb, either cut and sifted or sliced root, in water by itself or in combination with warming herbs.

Astragalus plays well with other herbs. By itself it's flavor is subtle and slightly sweet. I consider it a grounding herb. I also see it as a foundation for any herbal preparation allowing the flavors and energetics of the other herbs shine through while slowly building up. Like any strong building, the foundation is not seen but the stability is felt. The warming energetics that I felt immediately were most likely from the carminative herbs, ginseng, and other herbs. However, I do not doubt that astragalus contributed to the warming energetics as well. I did feel that my pores closed so I no longer felt internal coldness. I trust that astragalus is building upon itself and other herbs to support my immunity.

### ASTRAGALUS CHAI

#### Ingredients:

- 15-20 slices of astragalus root
- 1-2 cardamom pods, gently crushed
- 1 cinnamon stick
- 2 whole cloves
- 1/4" fresh ginger
- 1/2 tsp whole black peppercorns
- 1/8 tsp nutmeg
- 1/2 cup oatmilk

#### Instructions:

- To make chai concentrate, place all the ingredients in a pot, except oatmilk, with 2½ cups of water. Bring to a boil. Reduce heat and simmer for 20 minutes, covered. Strain.
- To make the tea, fill mug with half chai concentrate and half oat milk. Drink within 36 hours.

adapted from <https://learningherbs.com/remedies-recipes/astragalus-chai/>

### NOURISHING ASTRAGALUS, GOJI BERRIES, JUJUBE DATE, CHICKEN SOUP

#### Ingredients:

- 1 chicken thigh
- 4 slices of astragalus
- 8 red dates
- 1 tbsp goji berries
- 2 cups of water

#### Instructions:

- Wash and clean the chicken thigh. Trim away excess fat and skin
- Cut the red dates into halves and remove the seeds (optional)
- Place all the ingredients into a pot
- Pour cold water into the jar, enough to cover the ingredients
- Bring the pot of water to a boil, lower the heat to a simmer and cook for about 1 hour
- Add salt to taste before serving.

adapted from <https://www.homemade-chinese-soups.com/benefits-of-astragalus.html>

## RESOURCES

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## IMAGES AND GRAPHICS

- Page 1 - Botanical drawing found on emeryherbals.com.
- Page 2 - Chinese 5 elements diagram by Lillian Luu.
- Page 3 - Chinese farmer by Wu Xiaohui/chinadaily.com.cn.
- Page 3 - Astragalus leaf from Red Moon Herbs (left), Astragalus root from Peak Herbs (center), Astragalus flower from Mountain Rose Herbs (right)
- Page 3 - Plant profile diagram by Lillian Luu.
- Page 5 - System affinities diagram by Lillian Luu.

