

TREATING OSTEOARTHRITIS WITH CHINESE HERBS

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Osteoarthritis is a progressive joint disorder that is also known as degenerative joint disease, degenerative arthritis, osteoarthrosis (implying lack of inflammation), and commonly “wear and tear” arthritis. It is the gradual breakdown of cartilage in the joints and the development of bony spurs at the margins of the joints. The term osteoarthritis is derived from the Greek words, *osteo* meaning bone, *arthro* meaning joint, and *itis* referring to inflammation. This is somewhat of a contradictory term as osteoarthritis generally has little inflammation associated with it.

Osteoarthritis falls under rheumatic diseases. There are two main categories of arthritis: inflammatory and non-inflammatory. Osteoarthritis belongs in the non-inflammatory category. There are over 100 different types of arthritis (all sharing the common symptom of persistent joint pain) with osteoarthritis being the most common and affecting over 27 million people in the United States. Most people over 45 show pathological changes and many people over 50 show physical signs and symptoms of osteoarthritis as bones and cartilage naturally degenerate over time. It commonly affects the hands, feet, spine, and load-bearing joints, like the knees and hips, but can occur in any joint in the body. The load-bearing joints are usually the first joints to be affected.

ETIOLOGY AND PATHOPHYSIOLOGY

Multiple factors can contribute to the etiology of this disease. The exact cause of osteoarthritis is unknown, but occurs with the natural aging of the joints. Heredity may play a role and can influence your chances of developing osteoarthritis.ⁱ Mechanical stress, including overuse of the joints with forceful repetitive movements, as well as obesity, also contribute to disease formation. Other risk factors contributing to a predisposition to osteoarthritis include a sedentary lifestyle and prior injuries or surgeries that have weakened the joints, leaving them more susceptible to degeneration.

There are several structural changes that occur in osteoarthritis. Progressive articular (hyaline) cartilage damage/deterioration, outgrowth of osteophytes (bone spurs) around damaged joints where deterioration has occurred, increase in subchondral bone density, development of subchondral bone cysts, calcified cartilage at the junction of the articular cartilage and subchondral bone, the gradual narrowing of joint space, and synovial inflammation (a secondary response and the result of the cartilage and bone damage in osteoarthritis).

CLINICAL MANIFESTATIONS

Pain is the most common symptom of osteoarthritis followed by stiffness and limited range of motion. Joints may also become swollen and inflamed. The pain can vary in intensity from a dull ache to severe pain, often being worse at night or upon waking. The pain is often worse after exercise and worse with pressure. It is often described as “coming and going”. While people with osteoarthritis do not necessarily have to have pain, it is a very common symptom of osteoarthritis.

WESTERN MEDICAL DIAGNOSIS

Western diagnosis is made primarily from signs and symptoms, history, and a physical exam checking for tenderness, alignment, gait, stability, range of motion, and absence of an inflammatory response (heat, redness, and swelling). Western blood work is also used to rule out rheumatoid arthritis and gout. X-rays can show joint narrowing and osteophyte formation, confirming the osteoarthritis diagnosis.

WESTERN MEDICAL TREATMENT

The Western medical treatment principle is symptomatic relief and supportive therapy with an emphasis on controlling pain, increasing function and range of motion, and improving quality of life.

Western Therapy

Physical therapy and gentle exercises are recommended, such as aerobics, pool therapy, and stretching, with focus on low impact exercises and movements that increase range of motion and increase muscle strength. Massage therapy is used for affected joints and focuses on range of motion. Heat therapy can be used to help relieve pain and reduce

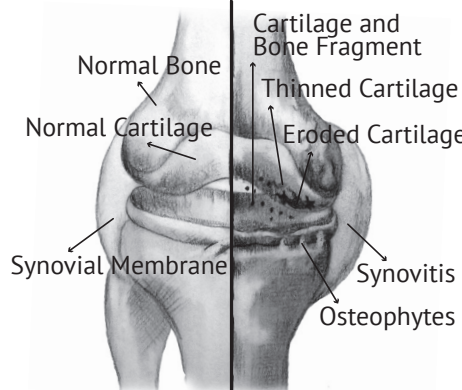
stiffness. Assistive devices like canes, walkers, knee supports, and braces, can be used to help reduce joint stress for functional improvement of quality of life. Nutritional advice is often given for weight control, which helps reduce joint stress. Decreasing inflammatory foods in the diet is sometimes recommended.

Western Drugs

Western drugs provide symptomatic relief. Acetaminophen (Tylenol), NSAID's (aspirin, ibuprofen, naproxin), and selective COX2 inhibitors (Celecoxib) are given for mild to moderate osteoarthritis. They are therapeutically effective at temporarily suppressing arthritic pain; however, each has side effects with continued use or excessive dosing. Acetaminophen can cause liver damage,ⁱⁱ NSAID's are very hard on the gastrointestinal system (gastric ulcers and bleeding),ⁱⁱⁱ and COX2 inhibitors increase the risk of cardiovascular disease.^{iv} These drugs, while relieving the immediate pain, can accelerate the deterioration of articular cartilage.^v Corticosteroid injections are another Western therapy that can provide temporary pain relief. These injections are more effective if there is inflammation. Relief is temporary, usually lasting two to four weeks. Western practitioners usually limit the number of injections to two to four per year due to dangerous side effects including the softening of cartilage and weakening of tendons. Synthetic hyaluronic acid joint (Hyalgen, Synvisc) injections are most commonly used for the knee joint and may also be used to provide temporary pain relief, with results similar to that of NSAIDs or steroid injections.^{vi} Topical creams like capsaicin, salicylates, topical NSAID's, and menthol can be applied topically to joints and may provide temporary pain relief.

Surgery

There are several surgical options for osteoarthritis including procedures like arthroscopy, joint irrigation, chondroplasty and cartilage grafting, joint fusion, and prosthetic joint replacement.



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ORIENTAL MEDICINE

Osteoarthritis is usually categorized under painful obstruction syndrome or *bi* syndrome (*bi zheng*). The term *bi* in Chinese refers to an obstruction, impediment, or blockage. Painful obstruction syndrome is the stagnation of qi and blood in the meridians causing pain due to external pathogenic wind-damp-cold (or heat) invasion and typically refers to bone and joint issues. Osteoarthritis can be further classified as bone painful obstruction syndrome.

Pathogenesis

Painful obstruction syndrome is caused by a general weakness or deficiency in the body, often presenting as qi and blood deficiency (including *wei* qi) and/or liver and kidney deficiency, making the body vulnerable to invasions. This enables the external pathogens, wind, damp, cold, and heat, to invade the muscles and joints. These pathogens block the meridians, which leads to qi and blood stagnation, resulting in pain. Secondly, the long term blood stagnation along with phlegm accumulation due to chronic poor transportation and transformation function of the spleen will cause osteophyte and bone cyst formation at the affected joints. At this stage the disease has progressed to bone painful obstruction syndrome.

Differential Diagnosis

In osteoarthritis the external pathogenic factors that invade the body are wind, damp, cold, and heat. The external pathogens are almost always combined together, especially wind, damp, and cold. There is usually one that is predominant and as such it is important to differentiate the diagnosis according to the predominance of one external pathogenic factor over the others. Each external pathogen acts on the body, and in particular qi and blood, differently.

Wind-predominant painful obstruction syndrome, also known as *moving obstruction*, is often seen in the early stages of the invasion. It is rarely predominant, but wind is always a factor in every pattern. It disperses the *wei* qi enabling external pathogens access. Blood deficiency enables the wind to maintain its presence in the muscles. It is usually seen in the upper body and the pain is described as a migratory/wandering pain, moving from joint to joint, and often seen with sore stiff muscles, limited range of motion, and aversion to wind.

Cold-predominant painful obstruction syndrome, also known as *painful obstruction*, is constricting, slowing the blood circulation and blocking the movement of qi and blood. This causes severe localized pain. It affects the muscles, tendons, and bones—settling in the joints, especially of the extremities. The pain is often characterized as severe, sharp, and stabbing, in a fixed location. There will be a localized sensation of cold that is better with warmth and worse with exposure to cold. It is often accompanied with stiffness, and can be difficult to disperse.

Damp-predominant painful obstruction syndrome, also known as *fixed obstruction*, is characterized as congealing, sticky, and heavy, obstructing the movement of qi and blood. It manifests as a fixed dull ache or soreness and can be described as diffuse pain with a sense of heaviness or possibly numbness. It is often accompanied with local swelling or edema and is usually seen in

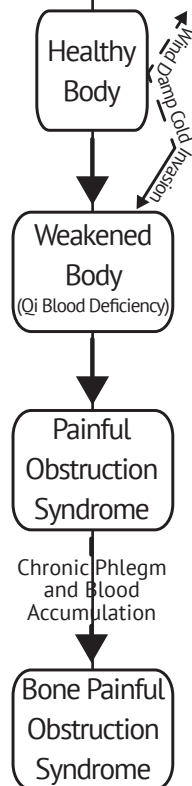
the lower body and worse in humid weather. Damp obstruction can be slow to resolve.

Heat-predominant painful obstruction syndrome, also known as *heat obstruction*, can be due to acute external invasion or internal wind-damp-cold transforming into heat. In an acute attack, heat is often accompanied with wind and damp. Internal wind-damp-cold transforming into heat is often seen in patients suffering from painful obstruction syndrome who have internal excess heat, yin deficiency with deficient heat, or qi stagnation causing heat which can be exasperated by painful obstruction syndrome. Heat obstruction manifests locally as red, swollen, and painful joints and muscles. A burning sensation may also be experienced. The local area is hot to touch and often has limited range of motion

Qi and blood stagnation is always a factor, since pain is the most common symptom in painful obstruction syndrome. As you address the underlying factors, the pain will alleviate. However, to relieve pain initially it is important to address the qi and blood stagnation immediately. This is why most formulas that treat painful obstruction disorder contain blood invigorating herbs. This can also help you identify which formula may be best for the individual patient. For example, for a patient who is presenting with very severe pain, you may want to initially choose a formula that contains more blood movers to address the pain, like **Course and Quicken Formula** (*Shu Jing Huo Xue Tang*). As the pain diminishes, switch over to a formula that focuses more on the underlying conditions, like **Du Huo and Loranthus Formula** (*Du Huo Ji Sheng Tang*) or **Chase Wind Penetrate Bone Formula** (*Zhui Feng Tou Gu Wan*). These formulas will be discussed later.

Organ involvement in osteoarthritis includes the kidney, liver, and spleen, with the kidney being the primary organ involved in osteoarthritis. It rules the bones and engenders marrow. It also stores the *jing* and is in charge of growth and development. As kidney *jing* declines with age, bone degeneration occurs. This decline starts around the age of 40 and is often when

the first signs of osteoarthritis begin to appear. The external pathogenic influence that affects the kidney the most is cold. The areas of the body most involved are the spine, and knees. The liver involvement is secondary to the kidney. It rules the tendons and sinews, stores the blood, and is responsible for the free flow of qi. Liver blood lubricates and nourishes the tendons and sinews. When liver blood becomes deficient, the result is dry, stiff, rigid tendons, with crackling joints, resulting in the inability to flex and extend joints. The external pathogenic influence that most affects the liver is wind, and the parts of the body often involved are the neck, upper back, and shoulder. The spleen rules the muscles and limbs and is in charge of the transformation and transportation process. The spleen is susceptible to injury, which can lead to general qi and blood deficiency, leaving the body exposed to external invasion. Spleen qi deficiency leads to poor transportation and transformation, weakening the muscles and predisposing the body to the accumulation of phlegm. The spleen dislikes damp, and when deficient, is more prone to contribute to damp painful obstruction.



Diagnosis and Treatment Principle

Chinese medicine treats osteoarthritis systemically as well as symptomatically. The classic root/branch treatment is often implemented for optimal effectiveness, treating the body constitutionally with herbs that focus on the root condition as well as the local manifestations. In general, the root is deficiency of kidney jing, liver blood, and spleen qi with damp accumulation. The branch (or local) is qi and blood stagnation, with wind-cold-damp lodged in the meridians, and in severe cases blood and phlegm accumulation. The treatment principle is to tonify liver and kidney, supplement qi and blood, dispel wind-cold-damp, move qi and blood, relieve pain.

Tissues Involved	Organ	Main Manifestation
Bone	Kidney	Bone deformation and weakness
Tendon and sinew	Liver	Tendon degeneration, rigidity
Muscle	Spleen	Muscle weakness, flaccidity, atrophy

GOLDEN FLOWER FORMULAS THAT TREAT OSTEOARTHRITIS

Essential Yang Formula (*Jia Jian Jin Gui Shen Qi Tang*) is a modification of the classical formula Golden Cabinet Kidney Qi Pill (*Jin Gui Shen Qi Tang*). It is a yang tonic that can effectively treat the underlying kidney yang deficiency. By warming kidney yang, the qi and blood flow will improve. However, warming kidney yang may not be enough for the immediate relief of the local pain, and will need to be combined with another formula to move qi and blood stagnation and disperse wind-damp.

Restorative Formula (*Yang Xue Zhuang Jin Jian Bu Wan*) is mainly a tonic formula, tonifying qi, blood, yin, and yang. It lightly disperses wind-damp and very lightly moves blood to relieve pain as well. This formula is ideal for elderly and weak patients who may not be able to handle stronger dispersing formulas.

Du Huo and Loranthus Formula (*Du Huo Ji Sheng Tang*) is a classical formula that treats painful obstruction syndrome with deficiency of the liver and kidneys as well as qi and blood deficiency. This formula focuses on the lower burner treating conditions like low back pain, leg and knee pain, joint stiffness, atrophy, and bone weakness. It treats the local manifestation by invigorating qi and blood in the local area and dispelling wind-cold-damp, while treating the constitutional weakness by supplementing the liver and kidney and nourishing qi and blood.

Chase Wind Penetrate Bone (*Zhui Feng Tou Gu Wan*) is a variation of a modern patent medicinal. Like **Du Huo and Loranthus Formula** (*Du Huo Ji Sheng Tang*) this formula focuses on painful obstruction syndrome, specifically wind-damp-cold obstruction, while also addressing the underlying deficiency of qi, blood, and yang. The main function of the formula is to remove the painful obstruction and relieve pain by dispelling wind-damp-cold, invigorating qi and blood, and supplementing qi, blood, and yang. This formula focuses on the lower body and is often used for more chronic conditions like low back pain, joint pain, knee pain, leg pain, and sciatica. It is especially good for elderly patients with difficulty walking or who have an unsteady gait.

Comparison: Du Huo and Loranthus Formula (*Du Huo Ji Sheng Tang*) and **Chase Wind Penetrate Bone** (*Zhui Feng Tou*

Gu Wan) both strongly address the root of the condition. They have a strong focus on clearing wind-damp-cold painful obstruction syndrome, with an even stronger emphasis on nourishing the underlying deficiency of qi, blood, and yang. They lightly move blood, but that is not the main focus of the formulas. **Chase Wind Penetrate Bone Formula** (*Zhui Feng Tou Gu Wan*) in contrast to **Du Huo and Loranthus Formula** (*Du Huo Ji Sheng Tang*) has a slightly stronger function to move qi and blood, while **Du Huo and Loranthus Formula** (*Du Huo Ji Sheng Tang*) is slightly stronger at supplementing the qi, blood, and yang. As these are often long-term use formulas, you can interchange them as patterns shift.

Juan Bi Formula (*Juan Bi Tang*) also known as “Remove Painful Obstruction Decoction” is a modification of the classical formula. This formula strongly disperses wind-damp-cold *bi* and secondarily moves blood to relieve pain. **Juan Bi Formula** (*Juan Bi Tang*) is often used for acute wind-damp invasions, but is also effective for chronic conditions. It focuses on the upper body, with the chief herbs targeting specific zones: notoptergium (*qiang huo*) going to the *du*, *taiyang*, and neck, curcuma (*jiang huang*) going to the shoulders and dredging the meridians, and mulberry twig (*sang zhi*) reaching the shoulders, arm, hands, and fingers. This formula focuses more on relieving the pain from wind-damp obstruction and while it does nourish blood, its attention is not on the underlying deficiency that is often seen in osteoarthritis.

Bone and Sinew Formula (*Zhen Gu Xi Jin Fang*) is a combination/modification of **Du Huo and Loranthus Formula** (*Du Huo Ji Sheng Tang*) and **Course and Quicken Formula** (*Shu Jing Huo Xue Tang*). When treating the underlying deficiency, this formula differs from some of the previous formulas by focusing primarily on tonifying yang, with an emphasis on strengthening the bones and re-knitting sinews using herbs like drynaria (*gu sui bu*) and dipsacus root (*xu duan*) that promote the healing of bones and sinews.

Course and Quicken Formula (*Shu Jing Huo Xue Tang*) is a classical formula that is very popular in Japan and Taiwan. Its primary focus is on nourishing and moving blood, and dispelling wind-damp. **Course and Quicken Formula** (*Shu Jing Huo Xue Tang*) is indicated for mainly excess conditions, focusing on the lower body, treating low back pain, knee pain, leg pain, sciatica, and joint pain.

Other Formulas

Eleuthero Tablets (*Wu Jia Shen Pian*) is comprised of a single herb, eleuthero (*wu jia shen*). *Wu jia shen* supplements the spleen and kidney yang, strengthens sinews and bones, invigorates blood and unblocks the collaterals. **Eleuthero Tablets** (*Wu Jia Shen Pian*) benefit the knees and low back and is especially beneficial for pain due to cold painful obstruction and blood stasis. Modern research has shown *wu jia shen* to be effective for osteoarthritis, reducing pain and improving physical function.^{vii}

Bupleurum and Cinnamon Formula (*Chai Hu Gui Zhi Tang*) is a classical formula that was originally designed to treat simultaneous *taiyang* and *shaoyang* disorders. This formula differs slightly from the other formulas that treat painful obstruction syndrome by focusing on muscle pain and joint pain in the limbs that include the key symptom of a crackling sensation in the joints due to wind in the joints. The joint pain is often accompanied by fever and chills and is especially beneficial if accompanied by one or

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Supplementing formulas that focus on the root condition. Used for deficient conditions.



Moving Formulas that focus more on the local signs and symptoms. Used for more excess conditions.

Essential Yang Formula <i>Jia Jian Jin Gui Shen Qi Tang</i>	Warms and supplements kidney yang
Restorative Formula <i>Yang Xue Zhuang Jin Jian Bu Wan</i>	Nourishes qi and blood, dispels wind-damp
Du Huo and Loranthus Formula <i>Du Huo Ji Sheng Tang</i>	Disperses painful obstruction, expels wind-damp, supplements qi, kidney yang and liver blood, moves blood
Chase Wind, Penetrate Bone Formula <i>Zhui Feng Tou Gu Wan</i>	Disperses painful obstruction, expels wind-damp-cold, supplements liver blood and yin, warms and supplements kidney yang, moves qi and blood
Juan Bi Formula <i>Juan Bi Tang</i>	Disperses painful obstruction in the upper body, expels wind-damp, moves and nourishes blood
Bone and Sinew Formula <i>Zhen Gu Xi Jin Fang</i>	Dispels wind-damp, supplements kidney yang and liver blood, knits bones and sinews, supplements and moves blood
Course and Quicken Formula <i>Shu Jing Huo Xue Tang</i>	Dispels wind-damp, moves qi and blood, nourishes blood, unblocks meridians

more *shaoyang* signs and symptoms like hypochondriac pain, sciatic pain, alternating chills and fever, and bitter taste.

Curcuma Longa Formula (*Jiang Huang Wan*) is a Golden Flower Original. This formula is especially beneficial when there is pain with inflammation, either local or systemic. **Curcuma Longa Formula** (*Jiang Huang Wan*) treats osteoarthritis a little differently by addressing the inflammation. Studies have been done indicating that low-grade systemic inflammation is present in patients with osteoarthritis and that the severity of pain is associated with low-grade systemic inflammation.^{viii} By removing the inflammation, the pain will be reduced. The three primary herbs in this formula, *jiang huang*, *hu zhang*, and *ru xiang*, effectively do this with a strong focus on moving blood and reducing inflammation.

For Wind-Damp-Heat Painful Obstruction

Wind-damp-heat painful obstruction is not a commonly seen pattern in osteoarthritis. But when it does occur, one option is to use a classical damp-heat formula like **Four Marvel Formula** (*Si Miao San*) to clear heat and dry damp. Another option is to combine one of the classical wind-damp formulas like **Course and Quicken Formula** (*Shu Jing Huo Xue Tang*), which already contains a couple of heat-clearing herbs, with a heat clearing-formula like **Coptis Relieve Toxicity Formula** (*Huang Lian Jie Du Pian*). This can be a very effective way of treating wind-damp-heat painful obstruction.

CONTEMPORARY ORIENTAL MEDICINE THEORY

There is a new theory that has been proposed in recent years regarding osteoarthritis. The emerging theory states that osteoarthritis is a combination of wilting syndrome (*wei* syndrome) and painful obstruction syndrome. Wilting syndrome is defined as the weakness or flaccidity of sinews due to lack of use that can prevent full movement of limbs. It states that osteoarthritis is a disease predominately of the sinews rather than the bone. This puts the focus more on the liver and less on the kidney. The theory is that articular cartilage is considered a sinew rather than bone in Oriental medicine, and therefore belongs to the liver.^{ix} Also, there is a lack of joint movement, which is due to the inability of tendons to flex and extend. This is mainly due to tendon degeneration. Liver blood nourishes and moistens the tendons and sinews.

As we age, liver energy weakens, causing liver blood deficiency, leading to tendon stiffness, impaired movement, spasms, cramps, numbness, and tingling.

The treatment principle has a greater emphasis on nourishing the liver. For this presentation you want to nourish liver blood, soothes sinews, and dispel wind-damp-cold. **Course and Quicken Formula** (*Shu Jing Huo Xue Tang*) is the optimal formula for this presentation with *dang gui* and *bai shao* as the chief herbs in the formula to tonify and nourish liver blood.

ENDNOTES

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