

Eucommia Bark Helps Maintain Strong Bones

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Eucommia bark is a major tonic herb used in Asia, and now throughout the world, that supports and helps mend the skeletal structure and its related tissues. Eucommia bark is collected from *Eucommia ulmoides* trees that are more than 10 years old. The bark is carefully peeled off in small pieces, and the bark grows back. The bark cannot be consumed raw. The bark is processed by various natural extraction techniques to produce a powder or liquid that may be consumed as a dietary supplement.

Eucommia bark has traditionally been considered to be a "superior herb." A superior herb, by definition, is an herb that may be consumed daily for the purpose of promoting health and well-being without side effects. Eucommia bark has remained a virtual icon of tonic herbalism in Asia for more than 2 thousand years. It has been consumed by billions of people, and is consumed by millions of people today as a superior life-enhancing tonic herb.

Though not yet as famous in the West as ginseng and goji, it is certainly in the same league. Every chiropractor should be aware of this important tonic herb because it has the capacity to directly contribute to the health and well-being of your patients.

Background

Eucommia is the only temperate-zone rubber tree. Inside the bark is a pure white latex. This hard gum is called *gutta-percha*. Eucommia bark, depending on quality, contains from 3 percent to 10 percent gutta-percha. The gum dissolves easily in alcohol, but not so well in water. This latex is noticeably elastic; it will stretch when one gently breaks the bark and stretches it slightly. This rubber is believed to confer strength to the connective tissue of those who consume it, and is considered to be a key active constituent of Eucommia bark. Older trees produce thicker bark and stronger latex. Eucommia contains a number of constituents that promote bone health and joint health.

Eucommia bark is considered to be very strengthening to the core of the body. But it is not a "stimulant." In fact, Eucommia bark calms the nerves. Its ability to help maintain normal blood pressure has been well-established.

Eucommia bark is the primary plant-sourced herb in Chinese herbalism used to tonify the "kidney *yang*" functions, including such functions as our structural integrity, inner power, sexual power, mental power (creativity) and resistance to disease.

Eucommia bark's first fame is as the primary herb in Chinese herbalism for building a strong, sturdy, skeletal structure and strong, flexible joints. It is used to strengthen the bones, ligaments and tendons, and has been used for centuries to help mend damage to these tissues, whether the damage is due to stress, age or trauma - or all three.

Eucommia bark is also the primary tonic herb of choice to strengthen the lower back and knees. Traditionally, it has been used to help with problems in the joints, including pain, stiffness, dislocation, swelling and weakness. However, it is not a mere palliative remedy. It is a tonic herb

that strengthens structural tissue and improves structural competency at a fundamental level. Therefore, it is preferably used as a tonic herb, as a daily supplement, to maintain the structural integrity of the body so that breakdowns in this system are much less likely, even as we age or are exposed to stress.

Bone Basics

Bone is a quintessentially important living tissue in the human body. [Bone matrix](#) functions as a reservoir of essential ions such as calcium, phosphate, magnesium and sodium. About 70 percent of the bone matrix is made of inorganic salts, principally salts of calcium and phosphate. Ninety-nine percent of the calcium in the body is stored in the bones. The enormous compressional strength of bone is derived from crystals formed from these salts.

Despite its apparent inanimate nature, bone is remarkably active metabolically. Old or damaged bone is constantly resorbed and replaced with newly generated bone. This continuous breaking down and rebuilding is the basis of the bone remodeling cycle. In an adult, 3-5 percent of the total skeleton is being actively remodeled at any one time to adjust to the changing environment and physiological demands. More than 5 percent of a normal healthy adult's bone mass is naturally replaced every year. The equivalent of your entire skeletal mass may be replaced every 10 to 20 years - 12 years being the estimated average.

Yet despite these changes in bone form and size, the ionic concentrations in cells and blood remain constant. The regulation of these ionic balances is largely dependent upon hormones. Maintaining a precise level of calcium within your blood is essential to survival. Too little or too much calcium will make the heart unable to beat. The release and uptake of calcium is controlled by regulatory hormones. The bones act as a reservoir for this essential mineral.

In normal bone, formation and resorption are closely coupled processes involved in the normal remodeling of bone. Normally, these processes are regulated in such a way that normal growth can take place and bone structure can be properly maintained in adults. If this balance goes awry, an "illness" will develop.

[In osteoporosis](#), for example, the net rate of bone resorption exceeds the rate of bone formation, resulting in a decrease in bone mass without a defect in bone mineralization. In women, osteoclast activity is increased because of decreased estrogen after menopause. Men with prematurely decreased testosterone may also have increased osteoclast activity. These changes result in a net loss of bone. The amount of bone available for mechanical support of the skeleton eventually falls below the fracture threshold and one may suffer fractures.

Osteoblasts and osteoclasts work in harmony to maintain a healthy bone structure, and osteocytes are the sensors that maintain that harmony. In the bone-building process, the functions of osteoblasts and osteoclasts are intimately intertwined, with each cell releasing chemicals that influence the other. As the bone is resorbed, the osteoclasts release signaling molecules called cytokines that attract osteoblasts and encourage them to start laying down new bone. The osteoblasts then incorporate small proteins into the bone matrix that they create. This harmonious functioning results in smooth bone formation.

Why does the body spend so much energy on bone remodeling? The primary reason is so the bone can adapt to different stresses placed on it, especially thickening it in areas that are under great load. The second reason for remodeling is so the bone is able to resist fatigue stress. Repetitive stress on any structure will cause it to fail. Through perpetual remodeling, the bone is able to repair small microscopic fractures before they develop into major fractures. A third reason is that

the process allows for the ready transfer of calcium into the bloodstream when needed for other functions. A fourth reason is that young bone protects the deep inner functions of bone best; that is, the functions associated with bone marrow production and its networking with the bloodstream.

Eucommia's Effect on Bone

During the process of building bone, some of the osteoblasts are trapped or "imprisoned" by the newly formed bone matrix they are building. These trapped osteoblasts become osteocytes. Osteocytes live for a long time within the bone, and remain quite functional, but in a different way. They communicate with the bloodstream by means of fine filaments.

Osteocytes appear to be acting as sensors, communicating information on the state of the bone to the other cells. They are believed to play a profound role in regulating the building and resorption of bone. Constituents in Eucommia bark extract apparently encourage the sensitivity and functions of the osteocytes, the regulatory component of the bone remodeling system.

Alcohol (methanol) and aqueous (water) extracts of eucommia bark have been tested for their therapeutic efficacy on osteoporosis. Results showed that Eucommia bark has powerful activity with regard to regulating bone remodeling. The components of Eucommia bark are thought to participate in each step of a mechanism for activating osteoblasts to facilitate osteogenesis (bone building), and suppress osteoclast activity. When osteoclast activity is outpacing osteoblast activity, osteoclast activity can be down-regulated and osteoblast activity can be up-regulated sufficiently to inhibit osteolysis (the excessively active resorption or dissolution of bone). Eucommia bark performs several other functions that encourage healthy bone and skeletal functioning as well.

Safety and Other Considerations

Eucommia bark is very mild and has no known adverse side effects or negative interactions with drugs. Eucommia bark is safe for both men and women, and has been traditionally given to both. Eucommia leaf is now being substituted for the bark in many commercial products (it is less expensive), but the leaf is believed to be less effective for structural issues than the bark.

Experiments conducted around the world continually demonstrate a very high tolerance for Eucommia bark by animals and humans. Animal studies repeatedly find no toxicity or side effects from the use of Eucommia bark at even high levels of consumption. No acute or chronic toxicity has been reported regarding the reasonable use of concentrated Eucommia ulmoides bark extracts in humans. Nevertheless, all herbs should be consumed in moderation, based on standard usage.

Eucommia bark is one of the few herbs in Chinese herbalism that is sufficiently powerful, balanced and broad spectrum that it may be used alone as a tonic. On the other hand, it may be combined with any number of other tonic, blood-vitalizing and remedial herbs in a formulation or tonic herbal program designed to build kidney *ying /yang*, strengthen sexual function, benefit cardiovascular functions, and serve as a key component of an anti-aging longevity program.

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