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# Doctor's Corner

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## Herbs and Liver Health

Most practitioners who practice various forms of natural medicine know the important role the liver plays in maintaining health in general. The liver is involved in thousands of biochemical mechanisms making it second only to the brain in importance and complexity. Natural health practitioners are also acutely aware of the detrimental effects on the liver of modern living, with its chemicals, excessive fat intake, pesticides, hormones, and stress. This suggests that we as a culture are in need of liver support. History suggests, and modern research is supporting, that botanicals have an important role to play in supporting a healthy liver.

### Mechanistic Overview

The liver has an almost miraculous ability to biochemically transform, break down, store, eliminate, and build up the plethora of chemicals to which it is exposed. Many botanicals have a very specific effect of modifying these biochemical processes. Some botanicals can enhance the liver's phase I (cytochrome P450) and phase II (glutathione conjugation) detoxification processes, promote the flow and production of bile (one means of eliminating toxins), inhibit the attachment of viruses or chemical antagonists to hepatocytes, strongly enhance the liver's powerful antioxidant systems, or promote the regeneration of liver tissue—the liver being the

only organ in the body except the skin able to regenerate itself. Many botanicals have been used historically for promoting liver health. Today, modern research is confirming these benefits while shedding light on their mechanisms of action. Following is an overview of a number of these botanicals.

### Milk Thistle *Silybum marianum*

The extract of the seeds of milk thistle is perhaps the most well researched of all the liver supportive botanicals. Part of its benefit has been in its ability to scavenge free radicals and to stimulate the regeneration of hepatocytes. In Germany, it is the botanical extract of choice for use in supporting a healthy liver. Typically, an extract yielding a minimum of 70% silymarin (a specific class of flavonoids) is used clinically at a dose of approximately 420 mg of the extract daily (Morazzoni and Bombardelli 1995).

### Schizandra *Schisandra chinensis*

Schizandra, known as bei wu wei zi in China, is one of the most widely used tonics of Chinese herbalism. Its original use was to support the health of the heart, kidneys and lungs and as a longevity tonic. Modern research has focused attention on its role as an adaptogen and for supporting a healthy liver. Adaptogens are substances that positively affect overall health by reducing stress mechanisms which can contribute to a number of bio-

chemical reactions that can be detrimental to health. While the mechanism of action of adaptogens has not been definitively determined, the existing literature suggests they work endocrinologically through the pituitary and adrenals and substantially reduce the negative effects that stress has on the system (Wagner et al. 1994). In China and Japan, the modern use of schizandra has focused on its benefit in those in need of liver support. In one review of its pharmacological activity, stabilization of liver enzymes was reported in more than 5,000 people. The benefits were experienced within 20 days of administration of schizandra with 75% of patients returning to normal values (Chang and But 1986). A limited number of controlled studies similarly reported on the beneficial effects of the equivalent of 1.5 grams of schizandra for reducing elevated liver enzymes (Liu 1991).

There are three primary mechanisms of action of schizandra reported with regards to its ability to support a healthy liver: 1) its ability to reduce lipid peroxidation induced by a number of different antagonists (antioxidant activity); 2) induction of hepatomicrosomal cytochrome P-450; 3) stimulation of protein biosynthesis and liver glycogen (Liu 1991). Such mechanisms make schizandra ideal as a liver-supportive botanical that is underutilized in the West.

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## **Bupleurum** *Bupleurum chinense*, *B. falcatum*

Bupleurum, also known as chai hu in China, is perhaps the most important of liver-supportive botanicals in China and Japan, and, like schizandra, is far underutilized in the United States, except by traditional Chinese herbalists. Traditionally, it has been regarded as an herb that helps to normalize the function of the liver from a traditional Chinese perspective. Modern research has identified a group of compounds known as saikosaponins that strongly support liver health (in humans and rats). Mechanisms of action specifically regarding liver health identified for bupleurum include anti-inflammatory activity, as well as its ability to stimulate the production and release of bile, thus facilitating the detoxification process (Wagner et al. 1996).

## **Sho-Saiko-To** *Minor Bupleurum*

In Chinese herbalism, herbs are seldom prescribed singularly. Rather they are combined according to very sophisticated principles of formulation based on the differential diagnosis of the patient. One of the most widely used and researched botanical formulas for the health of the liver used in China and Japan is Sho-Saiko-To, known in China as *Xiao Chai Hu Tang* (Minor Bupleurum). This classic formula consists of the following botanicals: ginger, scutellaria, jujube, ginseng, licorice, pinellia and bupleurum. It is widely used throughout Asia for supporting liver health and currently is the subject of phase II clinical trials at Sloan Kettering. The formula with its main ingredient, bupleurum, was first introduced in Japan by Chinese Buddhist priests between the 6th and 8th centuries. Modern research suggests that Sho-Saiko-To modulates the immune response, specifically in addition to other mechanisms, by increasing levels of interleukin and interferon (Huang et al. 2001).

## **Holistic Context**

To the same extent that herbs are seldom used singularly in Chinese herbalism, they are similarly used within a broader context that incorporates dietary and other lifestyle changes to support the botanicals. In my clinic, I routinely recommend that patients eliminate alcohol, coffee, sugar, and refined foods from their diet and eat whole grain foods, fish, and several servings of green vegetables daily along with their herbal program. For these individuals this is a simple program to follow, and many are able to live a normal productive life with a greater level of liver health. Such a liver-supportive program must be maintained as a way of life to lessen the burden that modern society and exogenous factors put on our livers.

## **Conclusion**

The herbal world offers a potential natural health care approach that focuses on protecting and restoring the health and functioning of the liver. Both traditional experience and modern investigation suggest that botanicals can play a role in world health, specifically in promoting liver health.

## **Caution**

The use of botanicals should be used under the guidance of a qualified health care professional. The combined use of conventional and natural therapies may not be appropriate. Before attempting to combine such therapies, discuss your therapeutic options with your primary health care provider.

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