

HCSP Herbal Dietary Supplements Glossary

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Version 9.2: April 2014

Special thanks to Marius-Daniel Brabete

http://hepatita-c.net/herbal-hepatita_c.htm

Dietary supplements are often part of people's health regimen. Being healthy includes making wise choices. This means knowing what goes into your body. If you take an herb or herbal blend, do you know what you are taking? This glossary provides information on some popular supplements.

Herbs are used in folk and mainstream medicine. Historically and in many cultures, herbs have been and continue to be used as tools for health. Because of this power, herbs and supplements deserve both respect and caution. Just because they are natural and available doesn't mean that the average person knows how to use supplements effectively. When learning about supplements, it is best to read information with a critical mind, INCLUDING what you read in this glossary.

This information is not intended as medical advice or endorsement of the use of dietary supplements. Always talk to your medical provider before taking any herbs or supplements. All herbs, drugs, and other substances have potential side effects. Allergic reactions have been reported for nearly every herb, sometimes with life-threatening consequences. If you suspect you are having an allergic reaction or other serious side effect, stop taking the substance and seek immediate medical advice. If you have trouble breathing or feel faint, call 911.

If you are scheduled for a medical or surgical procedure, particularly if anesthesia will be used, or plan to undergo chemotherapy, report supplement use to your medical provider. You may need to stop supplement use for a week or more before the procedure since many supplements interfere with anesthesia and/or blood clotting.

A few words about the supplements listed in this glossary:

- The goal was to choose supplements that may be particularly pertinent to those with liver disease, especially viral hepatitis.
- The information applies to supplements, NOT food. For instance, under *artichoke*, it says, "Avoid with bile duct obstruction or gallstones. Use cautiously in liver patients with clotting problems as artichoke may increase risk of bleeding." This means to use caution when taking extracts and formulations that have high doses of the active ingredients

found in artichoke. Unless your medical provider advises you otherwise, artichokes are generally safe to consume.

- Using the latest data, the information tries to show what the research proves. However, if something is not proven, that does not mean that the dietary supplement is ineffective—it just means that there is no scientific evidence to support it. For instance, the term, “unproven but purported to help with” means that people who use the substance may have benefited from that supplement, but at this point the supplement hasn’t been studied or the data doesn’t prove anything.
- Just because a supplement has a potential side effect doesn’t mean that the supplement is dangerous. A drug that may alter laboratory tests of liver enzymes may be a good thing if it means that it lowers them.
- Use sound judgment when considering a supplement. Check for possible interactions and consult with an expert.
- Research for the supplements listed in this glossary come from the *Natural Medicines Comprehensive Database*, an independent scientific-review organization that is not affiliated with any manufacturer, government, or institution.
- For more information on this subject, see other HCSP factsheets listed under *Hepatitis C and Complementary and Alternative Medicine*.

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A

Alfalfa (*Medicago sativa*)



This botanical has been used medicinally for many centuries. Unproven but purported to ease allergies, asthma, arthritis, diabetes, peptic ulcers, and thyroid problems. Small, uncontrolled studies reported that alfalfa may lower cholesterol levels.

Attention for Liver Disease: May cause a blood cell shortage, so those with cirrhosis or patients undergoing treatment with interferon should avoid. May bind with iron, so patients with iron overload and other liver diseases should use cautiously.

Safety Information: Organ transplant recipients should avoid alfalfa. Only use a product that is from a reputable source. There have been reports, including two deaths, from alfalfa contaminated with bacteria, arsenic and other unsafe substances. Is generally safe for up to 8 weeks. No safety data past 8 weeks. Mild gastrointestinal side effects are the most common complaints. Rashes, itching, skin redness and more sensitivity to sun have been reported. Use cautiously with history of diabetes and hypoglycemia. May increase thyroid levels and lower potassium levels. Use cautiously if taking blood thinners, such as warfarin. May exacerbate gout. Lupus-like symptoms have been reported by people taking alfalfa. Should be avoided by people with personal or family history of lupus. Alfalfa has estrogen-like properties, which may raise safety issues, particularly for those with hormone-sensitive cancers. There has been one reported case of swelling of the spleen and decreased amount of blood cells. May be unsafe for patients with autoimmune disorders. Although traditionally, alfalfa has been used to increase lactation, no data supports this. Safety has not been established for children, pregnant or nursing mothers.

Interactions: May interact with the following: birth control pills, blood-thinners, cholesterol-lowering agents, potassium, hormones, immunosuppressants, diabetes and thyroid medications. Alcoholics and those taking metronidazole (Flagyl) or disulfiram (Antabuse) should avoid alcohol-based tinctures and extracts.

Lab Notes: May increase thyroid levels and lower potassium levels. May interfere with coagulation results. May cause abnormal blood cell counts and increase urea levels.

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Aloe (*Aloe vera*, *Aloe barbadensis*, *Aloe capensis*)



Topically, the gel-like juice from aloe vera leaves has been used for thousands of years. There is some scientific evidence that shows aloe improves a number of skin disorders, including eczema, psoriasis, and genital herpes. Although most often used for burns and wound healing, research has not supported this application. In fact, aloe may delay healing in surgical and other wounds. Aloe has a laxative effect, but its safety is in question; the U.S. Food and Drug Administration warns against the use of aloe as a laxative.

Attention for Liver Disease: Internal use of aloe may cause acute hepatitis (inflammation of the liver) and increase liver enzymes.

Safety Information: Most likely safe if used topically. Minor redness and rash have been reported with topical use. When used orally as a laxative, may cause abdominal cramping and should be used very cautiously. Do not use if history of intestinal obstruction or intestinal diseases, e.g., Crohn's, colitis, appendicitis, abdominal pain. Internal use of aloe may interfere with nutrient absorption. Use cautiously with patients who have diabetic, cardiac, renal, or gastrointestinal conditions. Use cautiously with history of diabetes and hypoglycemia. Use cautiously if history of heart disease, since oral use of aloe may cause electrolyte imbalance. Not recommended for prolonged use or for injection. Deaths have occurred after aloe was injected in humans. Topical use of aloe is probably safe for children, pregnant and nursing women, but oral use is not recommended.

Interactions: Do not use with AZT. Internal use may interfere with loop diuretics, such as furosemide (Lasix). Do not use with other laxatives, cardiac medications, oral corticosteroids, or hypoglycemic drugs. Avoid topical use of aloe if using topical steroid medications.

Lab Notes: May alter potassium, liver enzymes and blood glucose lab tests.

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Alpha-Lipoic Acid (ALA)

Purported, but unproven uses include liver disease, cancer prevention, atherosclerosis and its treatment, HIV and AIDS. Small studies suggest that ALA may improve blood glucose levels in patients with type 2 diabetes. ALA may be useful for treatment of diabetic or cancer chemotherapy-induced neuropathy. May provide relief for Burning Mouth Syndrome. Research is being conducted using ALA for a variety of other purposes.

Attention for Liver Disease: May interact with drugs metabolized by liver.

Safety Information: Very few side effects have been reported. They are: allergic reaction, nausea, and vomiting. Diabetics need to watch blood sugar levels. Some experts discourage use of ALA in patients with hypothyroidism and thiamine deficiency. Insufficient safety data to make recommendations for children, pregnant or nursing mothers.

Interactions: May interact with drugs metabolized by liver.

Lab Notes: May lower blood glucose and thyroid levels.

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Artichoke (*Cynara scolymus*)



Artichoke is a frequent ingredient in “liver support” formulations. A study of hepatitis C patients using artichoke showed no improvement of liver enzymes, viral load, or baseline symptoms after 12 weeks. Some evidence supports the use of artichoke to lower cholesterol and stimulate bile secretion to improve digestion.

Attention for Liver Disease: Research showed no effect on hepatitis C. Avoid with bile duct obstruction or gallstones. Use cautiously in liver patients with clotting problems as artichoke may increase risk of bleeding.

Safety Information: Likely safe for short term use. Use cautiously with history of allergy or asthma. Avoid with bile duct obstruction and kidney disease. Do not use with gallstones unless under strict medical supervision. May increase risk of bleeding. The following have been reported: itching, rash, asthma, shortness of breath, cough, runny nose, flatulence, diarrhea, hunger, nausea, kidney failure. No safety data available regarding children, pregnant or nursing mothers.

Interactions: Use cautiously if taking medications that affect blood clotting.

Lab Notes: May alter blood-clotting results.

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Astragalus (*Astragalus membranaceus*)



In Chinese Medicine, this herb is commonly used for chronic or recurrent infections, not for acute ones and often in combination with other herbs. Astragalus is used for many health conditions and is purported to have immune stimulating and antiviral properties. Research is weak, but astragalus has shown enough promise that the National Center for Complementary and Alternative Medicine is conducting studies. May have cardiac and immune system benefits. Likely safe for most adults. Efficacy for treatment of hepatitis has not been established.

Attention for Liver Disease: May increase bleeding risk. Avoid if taking colchicine, diuretics or immune suppressants, such as steroids and anti-rejection drugs for liver transplantation. Do not take during hepatitis C treatment unless advised otherwise. Those with autoimmune hepatitis, primary biliary cirrhosis or other autoimmune diseases should avoid.

Safety Information: Some varieties of astragalus are known to be toxic to livestock, so only use *Astragalus membranaceus*. According to Traditional Chinese Medicine, avoid during acute infections. Those with autoimmune conditions should avoid unless advised otherwise. Avoid if taking beta-blockers and immune suppressants, such as steroids and anti-rejection drugs. Use cautiously in patients with bleeding or blood clotting disorders, and/or decreased clotting ability, such as those taking NSAIDs or anticoagulants. Use cautiously if diabetic or if taking growth hormones. May act as a diuretic. May interact with colchicine, procarbazine, sedatives, stimulants, and dopamine antagonists, such as Haldol. May interact with a long list of other supplements. Safety for children is not established, probably should avoid since astragalus may increase growth hormone. Pregnant and breastfeeding women should avoid.

Interactions: Do not take with immune suppression medications or lithium. Tragacanth, a derivative found in astragalus, may interfere with absorption of other substances. Therefore, do not take astragalus with any other medications or supplements.

Lab Notes: May lower blood pressure and blood glucose levels. May increase growth hormone levels and coagulation times.

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Black Cohosh (*Cimicifuga racemosa*)



This herb is best known for alleviation of menopause symptoms although studies have yielded mixed results on black cohosh's efficacy.

Attention for Liver Disease: Patients with liver disease are strongly advised to avoid black cohosh. There have been more than 30 reports of hepatotoxicity linked to black cohosh use. Reports of severe hepatitis, death and liver failure requiring transplant surgery. Experts do not know if the problem was due solely to black cohosh or contaminants. Because it appears to interact with cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)), do not take black cohosh during HCV treatment.

Safety Information: Black cohosh has a long list of reported adverse events; hepatotoxicity is the biggest safety concern. Black cohosh has estrogenic properties but only weakly so. Researchers are concerned about the possibility of cancer or use of cancer drugs interacting with this herb. Gastric discomfort is the most common side effect. Those with history of stroke or thromboembolism should avoid black cohosh. Cardiovascular and neurological (seizures) adverse events were reported by a very small number of patients taking black cohosh, although the link between the two is not solidly established. Black cohosh should not be taken by women who are pregnant or breastfeeding. No safety information is available for children.

Interactions: Black cohosh may interact with any cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)). Anyone with hormone-sensitive malignancies or those taking drugs such as tamoxifen or HRT may want to avoid or use cautiously. May interact with hormones, NSAIDs, anti-androgenic, and anticoagulant drugs.

Lab Notes: May lower blood pressure and interfere with liver function tests.

Note: If you decide to take black cohosh despite the warnings, do so with a full glass of water. Blue cohosh is not the same as black cohosh – do not substitute one for the other.

C

Capsicum (Cayenne, hot pepper) (*Capsicum frutescens* and *C. annuum*)



Capsaicin, the active ingredient in this common pepper, has anti-inflammatory properties. An FDA-approved cream using capsaicin is marketed under the name of Zostrix. Capsaicin is used for pain control in a variety of conditions, such as shingles, arthritis, and nerve pain.

Attention for Liver Disease: May lower liver enzymes.

Safety Information: May cause intense burning if the eyes are exposed to capsicum. Other side effects include the usual reactions to hot peppers – mouth and nose burning, sweating, gastrointestinal complaints, etc. May cause a rash. The safety for children, pregnant and nursing mothers is not established.

Interactions: May interact with acetaminophen, sedatives, ACE inhibitors, MAO inhibitors, theophylline, and anti-hypertensive medications.

Lab Notes: May alter liver function tests.

Note: Capsicum is used internally and topically.

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Cat's Claw (*Uncaria tomentosa*, *Uncaria guianensis*)



Small studies indicate that cat's claw may be effective for osteoarthritis and rheumatoid arthritis.

Attention for Liver Disease: Because it appears to interact with cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)), do not take cat's claw during HCV treatment.

Safety Information: Cat's claw may cause spontaneous abortion, so pregnant women should avoid. Also, do not use if trying to become pregnant. May cause headaches, dizziness, and vomiting. May lower blood pressure. The safety for children and nursing mothers is not established.

Interactions: Cat's claw may interact with any cytochrome p-450 metabolized ([see About Cytochrome P-450 below](#)). Avoid or use cautiously if taking immunosuppressant or blood pressure medications.

Lab Notes: None found.

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Chamomile (*Matricaria recutita*, *Chamaemelum nobile*)



Used internally for gastrointestinal problems and externally for skin and mucous membrane inflammation. There is some weak evidence pointing to the efficacy of chamomile for alleviating mouth sores and upset stomachs. There are ongoing studies evaluating the use of chamomile for anxiety, insomnia and chronic pain. Topical application of chamomile for dermatitis was proved ineffective.

Attention for Liver Disease: Chamomile may reduce clotting ability. Because it appears to interact with cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)), do not take during HCV treatment.

Safety Information: Rashes and allergic reactions are the most common side effects of chamomile. May increase bleeding risk. Possible risk for those with hormone-sensitive cancers or conditions. The safety for children, pregnant and nursing mothers is not established.

Interactions: Chamomile may interact with any cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)), and the list of drugs that may interact with chamomile is long. Use cautiously if taken with other sedating drugs.

Lab Notes: May interfere with coagulation labs, such as PT and INR. May lower creatinine levels.

Note: Chamomile comes in many forms. Ingested or applied as a tea are the most popular forms of administration.

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Chondroitin Sulfate

This supplement has been heavily researched and consistently showed varying results for osteoarthritis. These studies have been rigorously debated and to date the validity of the research remains in question. Chondroitin is often combined with glucosamine but can be taken alone. It can be derived from algae, cow trachea, shark, pig, and chicken or beef cartilage. There is also a synthetic form. Although unlikely to be an issue, those concerned about “Mad Cow” disease should avoid chondroitin made from bovine sources.

Attention for Liver Disease: May reduce clotting ability.

Safety Information: Appears to be well-tolerated. Stomach upset is the most common complaint. May increase risk of asthma attack. Men with risk of prostate cancer should avoid. May increase bleeding risk. The safety for children is not established. Pregnant and breastfeeding women should avoid.

Interactions: Use cautiously if taking medications that affect blood clotting.

Lab Notes: May interfere with coagulation labs, such as PT and INR.

Note: Chondroitin use may take over 3 months before there are noticeable benefits.

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Coenzyme Q10 (CoQ10)

CoQ10 is produced naturally in the body, but levels may decrease with age and chronic disease. Most compelling data points to possible benefit for those with mitochondrial disorders. May be effective for those with migraine headaches or hypertension. Weak support for a variety of other uses, including HIV, congestive heart failure, Parkinson’s, and diabetes. CoQ10 is being studied for its effect on a variety of other medical conditions.

Attention for Liver Disease: Rare reports of increased liver enzymes. May lower platelets.

Safety Information: CoQ10 is fairly safe. Side effects include fatigue, nausea, vomiting and GI distress, itching, rash, insomnia, loss of appetite, headache, dizziness, irritability, light sensitivity, and flu-like symptoms. A small study reported organ damage in heart patients using CoQ10 during intense exercise, but the correlation was unclear. Use cautiously if there is a history of diabetes, low blood pressure, thyroid disease or use of anticoagulants (warfarin, aspirin, ibuprofen, etc.) No safety data available regarding children, pregnant or nursing mothers.

Interactions: CoQ10 is known to interact with a long list of other drugs and supplements. These interactions seem to create dosing problems but are not true interactions. These include anticoagulants, blood pressure-lowering drugs, diuretics, cholesterol-lowering drugs, beta-blockers, oral diabetes drugs, antipsychotics, tricyclic antidepressants, clonidine, methyldopa, hydrochlorothiazide, hydralazine, thyroid medications, ginkgo, vitamin E and vitamin K. Use cautiously if you have HIV-related peripheral neuropathy and are taking [reverse-transcriptase inhibitors](#).

Lab Notes: Rare reports of increased liver enzymes. May lower platelet and blood glucose levels. May alter blood clotting and thyroid results.

Note: CoQ10 is fat-soluble and may be better absorbed when taken in an oil-based soft gel cap rather than in tablet or capsule form.

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Cordyceps (*Cordyceps sinensis*)



In China, cordyceps traditionally is harvested from caterpillar larvae. Has been used for a variety of medical conditions, including fatigue, hepatitis, and bronchitis as well as to enhance athletic and sexual performance, although none of this has been proven.

Attention for Liver Disease: None known. If cordyceps is an immune stimulant, then theoretically, it should be avoided by those with autoimmune hepatitis, primary biliary cirrhosis or other autoimmune diseases; those taking immune suppressants, such as steroids and anti-rejection drugs for liver transplantation; and those taking interferon.

Safety Information: To date there have been no reported adverse reactions. Diabetics should use cautiously as cordyceps may lower blood glucose.

Interactions: Use cautiously if taking medications to lower blood glucose levels.

Lab Notes: May lower blood glucose levels. May improve liver function tests for those with hepatitis B.

Note: On his website, Andrew Weil, M.D. recommends, “purchasing liquid or powdered extract not grown on caterpillars.” Cordyceps has not been tested on children, pregnant or nursing mothers. Andrew Weil advises against pediatric use.

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Cranberry (*Vaccinium macrocarpon*)



Research supports the efficacy of cranberry juice for prevention of urinary infections; may relieve ulcers. Cranberry juice has been used for a variety of kidney and urinary problems, particularly for urinary tract infections, but there is no evidence establishing its efficacy. There are weak findings linking cranberry to reduced dental plaque.

Attention for Liver Disease: May reduce clotting ability.

Safety Information: Most likely safe for everyone 2 years and older. Diarrhea and gastric distress are the most common complaints. High acid content may be a problem for those prone to acid reflux. Diabetic patients need to use sugar-free juice. Patients with oxalate kidney stones should not exceed 1 L/day. May increase bleeding risk. The safety for infants, pregnant and nursing mothers is not established.

Interactions: Use cautiously if taking medications that affect blood clotting. There have been a number of reports of suspected interactions between warfarin and cranberry juice, including two deaths from internal hemorrhages. Weak and contradictory reports about cranberry's potential to interact with cytochrome P450.

Lab Notes: May interfere with coagulation labs, such as PT and INR.

Note: May use white cranberry juice cocktail. To avoid unnecessary sugar, use artificially sweetened juice. Sucralose seems to be the safest artificial sweetener currently on the market.

D

Dandelion (*Taraxacum officinale*)



This common plant is used in Europe for hepato-biliary disorders, as an appetite stimulant, a diuretic and for dyspepsia. The evidence supporting its efficacy has not been proven.

Attention for Liver Disease: Avoid if you have bile duct obstruction. Dandelion may decrease clotting ability.

Safety Information: Dandelion is generally regarded as safe; however, it should be avoided by those with bile duct obstruction or gallbladder conditions. Most common side effects include itching and gastrointestinal complaints. May lower blood glucose levels, reduce clotting ability, and act as a potassium-sparing diuretic. The safety for children, pregnant and nursing mothers is not established, but likely safe when used as food.

Interactions: Avoid dandelion if taking lithium, diuretics, or ciprofloxacin. Use cautiously if taking medications to lower blood sugar. Weak evidence found in lab testing (not human) suggesting dandelion's potential to interact with cytochrome P450.

Lab Notes: May interfere with electrolyte, blood glucose and coagulation labs.

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DHEA (*Dehydroepiandrosterone*)

DHEA is a hormone, secreted by the adrenal glands and is normally found in humans. DHEA levels decrease as we age. DHEA is being studied for a long list of conditions. In clinical trials, DHEA was possibly effective in treating aging skin, lupus, osteoporosis, depression, erectile dysfunction and schizophrenia. Research found that DHEA was NOT effective for treating cognitive or physical performance in the elderly.

Attention for Liver Disease: May cause liver damage and should be avoided if there is a history of liver disease. Since DHEA appears to interact with cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)), do not take DHEA during HCV treatment.

Safety Information: Side effects include nausea, gastrointestinal discomfort, fatigue, headache, nasal congestion, acne, insomnia, and abnormal menses. Avoid if there is a history of abnormal heart rhythms, blood clots, Cushing's Syndrome and liver disease. May cause irregular heart rhythms. Since DHEA is a hormone, people with prostate, breast and other hormone-sensitive cancers should avoid it. Due to increased sex hormones, women taking DHEA may experience side effects such as voice deepening and excess facial hair. Men may have breast enlargement and other female sex hormone traits. DHEA may interact with hormones and alter the production of insulin, cholesterol, thyroid, etc. Use cautiously in women with endometriosis uterine fibroids polycystic ovary syndrome, etc. Use cautiously in patients with diabetes or hyperglycemia, high cholesterol, thyroid disorders, or other endocrine (hormonal) abnormalities. Serum glucose, cholesterol and thyroid levels may need to be monitored by a healthcare professional, and medication adjustments may be necessary. Insomnia, agitation, delusions, mania, nervousness, and irritability have been reported. Long-term effects of DHEA are unknown. Pregnant and nursing women should avoid DHEA. Not enough evidence to recommend safe use for children.

Interactions: May interact with any cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)). Women taking tamoxifen, birth control pills and other hormones may want to avoid. Anyone taking medication to regulate blood glucose levels or cholesterol may want to avoid. May cause dosing interferences with alprazolam, amlodipine, diltiazem, metformin, insulin, and morphine. Avoid if taking corticosteroids or insulin.

Lab Notes: May alter blood-clotting times. May lower blood pressure, cholesterol, hormone and blood glucose levels.

Note: As a supplement, DHEA is made synthetically. Wild yam does not contain or convert to DHEA. DHEA use is banned by the Olympic committee and other athletic organizations.

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Dong Quai (*Angelica sinensis*)



This herb is usually blended with other herbs and commonly used for medicinal purposes in Chinese medicine. In the U.S. and Europe, Dong Quai is used as a flavoring agent in food. Dong Quai has many purported uses, with treatment of premature ejaculation singled out as the only condition to be proven by research. It is frequently used to treat symptoms related to PMS and menopause, but the evidence for its efficacy is weak. Sometimes used to offset fatigue, but again, the evidence for this is weak.

Attention for Liver Disease: May decrease clotting ability.

Safety Information: As a food additive, is considered to be safe. Safety has not been proven for higher doses when used medicinally, but Chinese safety studies do not report evidence of toxicity. May cause gastrointestinal symptoms and raise blood sugar levels. Also reported are headache, light-headedness/dizziness, sedation/drowsiness, insomnia, irritability, fever, sweating, weakness, abnormal heart rhythms, blood pressure abnormalities, wheezing/asthma, hot flashes, worsening premenstrual symptoms, reduced menstrual flow, increased male breast size, kidney problems, and skin rash. An oil found in Dong Quai may be carcinogenic. Use cautiously in patients with bleeding or blood clotting disorders, and/or decreased clotting ability, such as those taking NSAIDs or anticoagulants. May cause photosensitivity (sun sensitivity). The safety for children is not established. May cause fetal abnormalities, so pregnant women should avoid. Safety during breastfeeding has not been established.

Interactions: Use very cautiously if taking anticoagulants, such as Coumadin. May interact with cardiac and blood pressure medications. There are disputes over whether Dong Quai shares some of the same properties of estrogen or how it interacts with estrogen, other hormones, or estrogen-sensitive medications and conditions. May also interact with other herbs and dietary substances. In particular, use cautiously with substances with similar anticoagulant properties, such as Ginkgo Biloba, and those with other estrogen-like properties, such as Black Cohosh.

Lab Notes: May raise blood sugar levels and alter coagulation labs, such as PT and INR.

Note: Dong Quai is most often blended in combination with other herbs. The roots are used much more often than the leaves.

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Echinacea (*Echinacea purpurea* and other varieties)



This popular herb comes in many forms. E. Purpurea is believed to be the most potent. Echinacea leaves and roots are purported to have mild antiviral and antibacterial properties. Research results are contradictory, and to date the effective uses for this herb are not well-established.

Attention for Liver Disease: Increased risk of liver toxicity when used with other potentially hepatotoxic substances/drugs. Because it appears to interact with cytochrome p-450 metabolized substances [v](#), do not take echinacea during HCV treatment.

Safety Information: Probably safe when used as recommended. Avoid if diabetic. Theoretically can interfere with immune function. Patients with HIV, cancer, TB, low white blood count or autoimmune diseases (MS, Lupus, etc.) should avoid or use cautiously.

Interactions: May interact with any cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)). Avoid if taking immune suppression drugs, interferon, or Kava. May increase caffeine concentration in the body. The safety for children, pregnant and nursing mothers is not established.

Lab Notes: May lower white blood cell count.

Note: Do not use for more than 8 consecutive weeks.

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Evening Primrose Oil (EPO) (*Oenothera biennis*)



EPO is a source of essential fatty acids (GLA). Small studies suggest that EPO taken orally may relieve breast soreness. Improved results in osteoporosis studies when EPO was taken in conjunction with fish oils and calcium. Purported to help a number of conditions, such as eczema, PMS, chronic fatigue, rheumatoid arthritis, and Sjogren's syndrome, but, research did not show clear evidence to support this.

Attention for Liver Disease: May decrease clotting ability.

Safety Information: Headaches, nausea, and gastric upset were reported. Contraindicated for those with schizophrenia. Seizures have been reported by people taking EPO in conjunction with certain medications or anesthesia. EPO may interfere with clotting ability. Pregnant and nursing women should avoid EPO. Not enough evidence to recommend safe use for children except for medically supervised treatment of eczema and dermatitis.

Interactions: Reports of interactions with phenothiazines and anesthesia. Has the potential to interact with anticonvulsant and antihypertension medications.

Lab Notes: May alter coagulation results.

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Fennel (*Foeniculum vulgare*)



Fennel is used in cooking and is generally safe. Fennel seed and oil are the part of the plant used for medicinal purposes. As a supplement, fennel is commonly used for upset stomachs, but research isn't strongly conclusive. Research supports the use of fennel for colicky babies, although two cases of infant neurotoxicity were reported from breastfeeding women who drank herbal tea with fennel.

Attention for Liver Disease: May alter liver laboratory results.

Safety Information: Fennel is generally safe. Allergic reactions are common. Seizures have been associated with fennel oil use. Avoid if history of seizures. Diabetics should use cautiously fennel that is prepared in syrup or honey. Probably safe for children if taken in small doses. Safety for pregnant or breastfeeding women is unknown.

Interactions: Do not take within 2 hours of taking ciprofloxacin. May interact with hormones and birth control pills.

Lab Notes: May alter liver function tests and blood-clotting times. May lower blood pressure, cholesterol and blood glucose levels.

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Feverfew (*Tanacetum parthenium*)



The leaf of this plant is purported to have a number of uses. A few small studies showed that feverfew might help with prevention of migraine headaches. May have pain-relieving properties, but evidence for this is not strong. Research on feverfew's effect on rheumatoid arthritis is inconclusive.

Attention for Liver Disease: May decrease clotting ability. Because it appears to interact with cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)), do not take feverfew during HCV treatment.

Safety Information: Most side effects were mild. Inflammation of the lips, mouth, gum, and throat were the most common. Gastrointestinal distress and sun sensitivity were reported. There were withdrawal symptoms for those who stopped feverfew after long-term use. These were headache, anxiety, insomnia, and muscle and joint discomfort. Those with platelet or clotting problems should use cautiously. Risk of miscarriage or premature delivery, so avoid if pregnant. Safety of feverfew for children and nursing mothers is not established.

Interactions: May interact with aspirin, NSAIDs, coumadin, and other anticoagulant drugs. May interact with any cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)).

Lab Notes: May interfere with coagulation labs, such as PT and INR.

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Fish Oil

The primary groups of essential fatty acids are omega-3s and omega-6s. Fish oils are high in omega-3s. Fish oils have attracted a great deal of interest and research. As part of one's diet, the evidence is strongly in favor of fish oil's ability to lower triglycerides; may also lower blood pressure and protect against the occurrence of sudden heart attack. Fish oils may help with many other conditions, such as rheumatoid arthritis, depression, cognition, inflammation, and

protection from cyclosporine toxicity in heart and kidney transplant patients. Research has found that fish oils may raise both LDL and HDL cholesterol, making it an impractical choice for high cholesterol patients. Research also suggests that fish oil does not prevent organ transplant rejection or improve cirrhosis.

Attention for Liver Disease: May increase liver function levels and interfere with blood clotting. May raise vitamin A and E levels.

Safety Information: Most common reports were a fishy aftertaste, rash, and gastrointestinal complaints: indigestion, acid reflux, burping, bloating, loose stools and diarrhea. Use cautiously if diagnosed with bi-polar disease, diabetes, low blood pressure, or have reduced blood-clotting ability. Use of over 3 grams daily of fish oil may interfere with blood clotting. Fish can be high in mercury and other contaminants. Safety of omega-3 fatty acids has not been established for infants, children, pregnant and breastfeeding women. However, these groups should avoid fish as a source of omega-3s because of the high risk of mercury ingestion.

Interactions: May raise vitamins A and E, both of which can be toxic in high amounts.

Lab Notes: May raise blood glucose levels, LDL/HDL cholesterol and increase blood-clotting times.

Note: Fish oil has many kinds of omega-3 fatty acids. DHA and EPA are most abundant in cold-water fish, especially salmon. DHA and EPA are also found in nuts, seeds, soy, and in trace amounts in dark green leafy vegetables. It is suggested to start with low amounts of fish oil, gradually increasing the dose. Fish oils should be taken with meals and a full glass of water. If you eat a diet high in fish, use caution to avoid excess mercury.

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Flaxseed and Flaxseed Oil (*Linum usitatissimum*)



Flaxseed is high in fiber and used as a laxative. It is high in an essential fatty acid, top-linolenic acid. The oil has no fiber. Possibly effective for treatment of diabetes, high cholesterol, menopausal symptoms, and lupus. Other purported uses include cancer prevention, heart disease, and high blood pressure, but data is inconclusive.

Attention for Liver Disease: May alter liver laboratory results and increase bleeding risk.

Safety Information: Most common side effects are increased bowel movements and flatulence. Constipation may occur if flaxseed is taken with insufficient water. Long-term effects are not known. Use cautiously if taking blood-thinning medications. Men with a history of prostate cancer should avoid flaxseed.

Raw flaxseed and unripe pods may be poisonous. Overdose of flaxseed may cause breathing difficulties, weakness, seizures, paralysis and difficulty walking. Avoid flaxseed use if bipolar. Because of its laxative effects, avoid when there are pre-existing bowel problems. Large amounts of flaxseed may cause bowel obstruction. Take the seed with large amounts of water, at least a 1:10 ratio. Diabetics should use cautiously. People with hormone sensitive conditions or cancers should avoid flaxseed. Pregnant and nursing women should probably avoid flaxseed. Not enough evidence to recommend safe use for children.

Interactions: Flaxseed may interfere with drug absorption. Do not take any drugs, herbs, or other supplements one hour before or two hours after taking flaxseed. May interfere with mood stabilizing medications. Women taking tamoxifen, birth control pills and other hormones may want to avoid. Use cautiously if taking blood-thinning medications.

Lab Notes: May alter prostate specific antigen, triglyceride and blood-clotting tests. May increase blood sugar levels. Flaxseed increased the red blood cell count in animal studies.

Note: Flaxseed breaks down when cooked or exposed to high heat. Flaxseed needs careful storage. Dry flaxseed may be stored in a cool dry location for up to one year. Flaxseed oil should be kept refrigerated in a dark opaque bottle.

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Garlic (*Allium sativum*)



Garlic has a long history and may have many health benefits. In clinical trials, garlic lowered total and low-density cholesterol. Weak evidence showed improved results when garlic was used for atherosclerosis and hypertension. May reduce risk of developing stomach and colon cancer. Topical application of garlic may treat ringworm, jock itch, athlete's foot, and reduce risk of tick bites. There is quite a bit of garlic research, but more evidence is needed to establish efficacy.

Attention for Liver Disease: May decrease clotting ability. Because it appears to interact with cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)), do not take garlic supplements during HCV treatment. Eating garlic is likely safe.

Safety Information: Garlic is probably safe at recommended doses. Garlic may cause bad breath, body odor, gastric complaints and allergies. Garlic may increase bleeding risk. Avoid topical application and ingesting large amounts. A myocardial infarction was reported in a 23 year-old man who took excessive amounts of garlic. May be safe for children, pregnant or nursing mothers, but may alter the flavor of breast milk.

Interactions: Patients taking cyclosporine should use cautiously. One report of garlic's interference with the effectiveness of saquinavir, a drug used to treat HIV infection. Two reports of gastrointestinal distress by people taking garlic and HIV drug, ritonavir. May interact with any cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)). May interact with fish oils, EPA, pycnogenol, NSAIDs, protease inhibitors, hypoglycemic, anti-hypertensive, thyroid, lipid-lowering, and anticoagulant drugs.

Lab Notes: May cause abnormal insulin and thyroid levels, increase clotting times, and lower cholesterol, blood sugar and blood pressure.

Note: Fresh garlic is probably the best form to use, as commercial garlic formulations may not have sufficient active ingredients.

Ginger (*Zingiber officinale*)



Ginger is a good example of how a plant can be used as a food, spice or medicine. Research supports the efficacy of ginger for pregnancy-related nausea and vomiting. May help with vertigo and post-operative nausea. The evidence is weak regarding the use of ginger for nausea related to chemotherapy migraines or motion sickness. Ginger's effectiveness for treatment of osteoarthritis and rheumatoid arthritis has not been established.

Attention for Liver Disease: Theoretically could decrease clotting ability.

Safety Information: Most common side effects are gastrointestinal complaints. Central nervous system depression and arrhythmias have occurred following overdose. Anecdotal reports of miscarriages in women taking ginger, but likely to be safe for pregnant and nursing women if used in moderate doses for no more than five consecutive days. Safety not established for children.

Interactions: Use cautiously if taking anticoagulants, H2-blockers, antihypertensives or blood sugar lowering medications. Use cautiously with high doses of calcium.

Lab Notes: May alter coagulation and blood glucose levels.

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Ginkgo Biloba (*Ginkgo biloba*)



This herb has been used for centuries and has been studied extensively. Ginkgo may be effective for many conditions, such as leg pain from clogged arteries, dementia and cognitive decline, circulatory problems, glaucoma and diabetic retinopathy. Ginkgo may also improve symptoms associated with PMS, Raynaud's syndrome and vertigo. Evidence is promising but insufficient and conflicting to draw firm conclusions.

Attention for Liver Disease: May decrease clotting ability. Because it appears to interact with cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)), do not take ginkgo during HCV treatment.

Safety Information: Generally, ginkgo has a good safety record when used as recommended. Ginkgo fruit pulp and seeds are toxic: 70 reports of toxicity, including seizures, loss of consciousness, and death. May increase bleeding risk. Use cautiously in patients with bleeding or blood clotting disorders, and/or decreased clotting ability, such as those taking NSAIDs or anticoagulants. Use cautiously if diabetic. May lower seizure threshold. Reports of dermatological, neurological, cardiovascular and gastrointestinal side effects. Theoretically may reduce male and female fertility. Unsafe for infants. No safety data for children. Not recommended for pregnant or nursing women.

Interactions: May interact with any cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)). Ginkgo is known to interact with a very long list of drugs, herbs and supplements, such as many types of antidepressants, antipsychotics, anticoagulants, insulin, ibuprofen, erectile dysfunction drugs and Yohimbe. May increase colchicine levels.

Lab Notes: May alter coagulation labs, such as PT and INR. May increase concentrations of insulin and C-peptides in the blood.

Note: Never take high doses or extracts with ginkgolic acid. Only use standardized ginkgo.

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Ginseng, Asian (*Panax ginseng*)



Asian ginseng, American ginseng, and Siberian ginseng are three separate herbs. The Asian or *Panax* has been widely studied and has earned a prominent reputation in Chinese medicine, where the root is used. May provide benefits for diabetes, cognitive disorders, and male sexual dysfunction. Purported to improve immune function and fatigue along with many other uses but no scientific evidence for this.

Attention for Liver Disease: May alter liver function tests. May decrease blood clotting. One case of liver damage reported. Because it appears to interact with cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)) do not take ginseng during HCV treatment.

Safety Information: Multiple side effects and warnings, including autoimmune, cardiac, bleeding, and manic symptoms. Headaches, sleep and gastric-related problems were the most common complaints. May decrease blood sugar levels and cause menstrual irregularities and breast tenderness. Children, pregnant and nursing women, and those with history of breast or uterine cancer should avoid ginseng.

Interactions: May interact with any cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)). May interact with many drugs including warfarin, aspirin, ibuprofen, naproxen, MAO inhibitors, calcium channel blockers, digoxin, and opioids. Should not be used with other stimulants, including excessive caffeine.

Lab Notes: May alter blood pressure, blood glucose levels and liver function tests. May alter coagulation labs, such as PT and INR.

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Glucosamine

Research results have not shown any conclusive evidence proving glucosamine's effect on osteoarthritis or pain. Glucosamine is often combined with chondroitin but can be taken alone. Made from corn or shellfish.

Attention for Liver Disease: One report of liver inflammation after patient took high doses of glucosamine.

Safety Information: Avoid or take corn version if allergic to shellfish. Side effects include gastric discomfort, headache, itching, leg pain, edema, drowsiness, insomnia, sun sensitivity, and toughening of the nails. Increased blood pressure, heart rate and palpitations also reported. May lower blood sugar levels. Use cautiously if there is history of asthma or diabetes. Cataracts were reported in animal studies, but not in humans. The safety for children is not established. Pregnant and breastfeeding women should avoid.

Interactions: May interact with diuretics, warfarin, insulin and recombinant erythropoietin.

Lab Notes: May lower blood glucose levels and increase blood pressure. May alter coagulation labs for patients taking warfarin.

Note: Small studies reported that glucosamine may take more than 3 months before there are noticeable benefits.

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Green Tea (*Camellia sinensis*)



Green tea has been used for centuries. It is a source of antioxidants. It also contains caffeine and tannins. Green tea's ability to increase alertness had positive results in clinical trials; its anti-cancer and cholesterol-lowering properties yielded weak results. Caffeine may help to relieve headaches and fatigue. A topical green tea extract has been approved for external use on genital warts.

Attention for Liver Disease: Reports of hepatotoxicity from patients taking green tea extracts. May decrease clotting ability.

Safety Information: The majority of warnings are associated with green tea's caffeine content. Caffeine acts as a stimulant and diuretic. The primary complaints were frequent urination, nervousness, insomnia, and gastric discomfort. Anyone needing to avoid or reduce caffeine should use decaffeinated green tea. This includes those with anxiety, high blood pressure, cardiac, kidney and hyperthyroid disease. May delay blood-clotting ability, especially if high amounts are used. May stimulate stomach acid production. Classified by the FDA as "generally regarded as safe." Pregnant and breastfeeding women should avoid caffeine. High caffeine use during pregnancy is associated with risk of birth defects and SIDS. Caffeine can cause sleeplessness in infants. Safety in children is not established.

Interactions: May interact with MAO-inhibitors, codeine, stimulants and other herbs. Can reduce iron's bioavailability, so do not drink green tea two hours before or 4 hours after taking iron supplementation.

Lab Notes: May increase blood-clotting times and blood glucose levels. May lower electrolyte levels.

Note: One cup of average strength green tea has approximately 50 mg of caffeine.

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Hoodia (*Hoodia gordonii*)



This succulent plant has attracted a great deal of interest because of its supposed weight-loss properties. However, none of this is evidence-based. One never-published “study” of 18 obese people supposedly showed weight loss, but this research was not well-constructed or scientifically reviewed. The biggest problem with hoodia is that it is scarce and much of what is being sold to consumers has little or no actual hoodia.

Attention for Liver Disease: None known.

Safety Information: Not known.

Interactions: None known.

Lab Notes: None known.

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Licorice Root (*Glycyrrhiza glabra* and *G. uralensis*)



This root has been used for centuries in many parts of the world. An NCCAM review of randomized, controlled studies using injectable licorice extract reports possible benefits for improvement of liver tissue for hepatitis patients and may reduce HCV complications for non-responders to interferon treatment. Research did not support the notion that licorice root prevents liver cancer in those with HCV. Glycyrrhizin may lower liver enzymes but does not seem to lower HCV viral loads. May be an effective treatment for upset stomachs. Purported to stimulate the adrenal glands and prevent ulcers related to aspirin or NSAID use, but the evidence is insufficient.

Attention for Liver Disease: In spite of the NCCAM review, those with liver disease should use cautiously until safety and efficacy have been well established. Should be avoided by anyone with cirrhosis or cholestatic liver disorders. May worsen ascites. May lower liver enzymes.

Because it appears to interact with cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)), do not take licorice during HCV treatment.

Safety Information: Likely safe when used in moderate amounts. Glycyrrhizin is the primary active substance in licorice root, and may have the most potential to harm; deglycyrrhizinated licorice is safer, but may not be effective. However, efficacy hasn't been established in either form of licorice. Prolonged or excessive use can lead to potentially serious side effects including, potassium depletion, high blood pressure, lethargy, hypertensive encephalopathy, sodium and water retention and swelling. Should be avoided by anyone with kidney disease, diabetes, and hormone-sensitive cancer. Other potential side effects include nausea, vomiting, headache, and decreased libido in men. Should be avoided by pregnant and nursing women. Safety in children is not established.

Interactions: May interact with diuretics, digitalis, antiarrhythmics, corticosteroids, heart and blood pressure medications, MAO inhibitors, antidiabetes drugs, anti-rejection agents, hormones, birth-control pills and anti-cancer drugs such as tamoxifen. May interact with any cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)).

Interactions: May interact with diuretics, digitalis, antiarrhythmics, corticosteroids, heart and blood pressure medications, MAO inhibitors, antidiabetes drugs, anti-rejection agents, hormones, birth-control pills and anti-cancer drugs such as tamoxifen.

Lab Notes: May decrease liver enzymes, potassium and testosterone levels. May increase sodium levels and blood pressure. May alter blood glucose levels.

Note: Licorice root should not be used for more than 4 to 6 weeks. Prolonged use increases risk of serious side effects. Some sources recommend use of deglycyrrhizinated (DGL), since glycyrrhizic acid may be responsible for most of the side effects. However, some argue that this reduces overall effectiveness.

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Maitake (*Grifola frondosa*)



Maitake is a mushroom, making it both a food and a supplement. Has been found to be safe as a food source. Laboratory studies indicate possible anticancer properties but no results yet from human clinical trials. Some purported but unproven uses include immune stimulation, antihypertensive, antidiabetes, and ability to lower cholesterol.

Attention for Liver Disease: None known. If maitake stimulates the immune system, then theoretically, should be avoided by those with autoimmune hepatitis, primary biliary cirrhosis or other autoimmune diseases; those taking immune suppressants, such as steroids and anti-rejection drugs for liver transplantation; and those using interferon.

Safety Information: Maitake may lower blood pressure and blood glucose levels. Safety for children, pregnant or breastfeeding women has not been established.

Interactions: Use cautiously if taking medications to treat blood pressure or blood glucose levels. Use cautiously if taking other herbs or supplements that are known to also lower blood pressure or blood glucose levels.

Lab Notes: May lower blood pressure and blood glucose tests.

Note: Be sure not to confuse maitake mushrooms with a poisonous variety.

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Melatonin (*N-acetyl-methoxytryptamine*)

Melatonin is a hormone produced by the body's pineal gland. Melatonin responds to the presence and absence of light, which affects sleep-wake cycles. As a supplement, melatonin is not well absorbed by the body and is rapidly metabolized by the liver. Research supports the efficacy of melatonin for jet lag and sleep-related problems. There is mixed evidence supporting its efficacy in other purported uses, such as for depression, nicotine withdrawal, and, prostate cancer. Clinical trials are underway testing the use of melatonin for a variety of indications.

Attention for Liver Disease: Melatonin has been linked to autoimmune hepatitis. Because it appears to interact with cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)), do not take melatonin during HCV treatment.

Safety Information: Melatonin has few side effects when used short-term. Common side effects include fatigue, dizziness, irritability, headache, mood changes, disorientation, eye problems and gastrointestinal complaints. There may be an increased risk of blood clotting, particularly for those taking blood-thinning drugs. Use cautiously if there is a history of seizures, major psychiatric problems, heart disease, blood pressure problems, and diabetes. Hormonal side effects have been reported, so use cautiously with any condition or medication that may be

influenced by hormones. Long-term effects are unknown. Pregnant and nursing women should avoid melatonin. Not enough evidence to recommend safe use for children.

Interactions: May interact with any cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)). Use cautiously with alcohol, caffeine, blood-thinning, anti-depressant, anti-seizure, blood pressure, diabetic and any sedating medications and supplements. Use cautiously if taking **Nifedipine** or Fluvoxamine.

Lab Notes: May affect blood pressure, blood sugar levels and blood-clotting tests.

Note: Taking melatonin too early in the daytime may cause daytime drowsiness.

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Milk Thistle (*Silybum marianum*)



A great deal of research has been conducted using this herb for a variety of liver diseases, although research specifically targeting HCV is scant. Three ingredients in milk thistle are of scientific interest because of their potential therapeutic value and capacity to protect the liver. These ingredients are silibinin, silychristin, and silydianin, collectively known as silymarin. The evidence is promising regarding the use of milk thistle for upset stomach and diabetes. The evidence is inconclusive at this point regarding milk thistle's potential to treat various liver diseases. Further hepatitis C studies are currently underway.

Attention for Liver Disease: The Hepatitis C Antiviral Long-Term Against Cirrhosis (HALT-C) study reported that silymarin was associated with reduced symptoms, but not reduced liver inflammation when used by HCV patients. May lower liver function tests. Because it appears to interact with cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)), do not take milk thistle during HCV treatment especially if taking Olysio (simeprevir) combination therapy.

Safety Information: If used as recommended, milk thistle is generally safe. Reported side effects are mild laxative, gastric complaints, itching and lowered blood sugar levels. Safety has not been established for children, pregnant or nursing mothers.

Interactions: May interact with any cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)). Silymarin has the potential to interact with many drugs, herbs and dietary supplements. A few are hormones, methadone, antibiotics, anti-seizure, antidepressants, antipsychotics, antihistamines, organ transplant-rejection, cardiac, lipid-lowering drugs and sleeping pills.

Lab Notes: May alter liver function tests and blood sugar levels.

Note: The biggest issue with milk thistle is that the quality varies tremendously among products and what is available may be of poor quality. Research-grade milk thistle is difficult to find in the U.S.

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Peppermint (*Mentha piperita*)



This flowering plant has been used for centuries. It is used in gum, toothpaste, mouthwash, and tea. Research supports the effectiveness of peppermint oil to relieve indigestion. Topical application of peppermint oil may relieve tension headaches. Weak evidence regarding peppermint's effect on postherpetic pain and irritable bowel syndrome.

Attention for Liver Disease: Avoid peppermint oil if you have liver damage or bile duct obstruction. Use peppermint tea in moderate amounts and with caution. Use under medical supervision if taking anti-rejection drugs, such as cyclosporine. Because it appears to interact with cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)), do not take peppermint during HCV treatment.

Safety Information: As a tea, it is likely safe when used in moderate amounts. Peppermint oil can be deadly at high doses. Side effects include skin, eye, and digestive tract irritation. Infants, children, pregnant and breastfeeding women should avoid.

Interactions: Do not use peppermint oil if taking felodipine (Plendil), simvastatin (Zocor), cyclosporine or other anti-rejection medications. Avoid if taking medications that reduce stomach acid. May interact with any cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#))

Lab Notes: May alter hormone tests.

Note: Peppermint oil – adults should never exceed 1 gram per kilogram of body weight. Read the safety information as there is a significant difference between peppermint leaf and oil.

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Reishi (*Ganoderma lucidum*)



Reishi is a mushroom, making it both a food and a supplement. Has been found to be safe as a food source, but may be toxic at high levels. Some purported but unproven uses include immune stimulation, anti-inflammatory properties, cholesterol-lowering properties and ability to lower high blood pressure. No proven effect on viral infections or fatigue management.

Attention for Liver Disease: May decrease clotting ability. If reishi stimulates the immune system, then theoretically, should be avoided by those with autoimmune hepatitis, primary biliary cirrhosis or other autoimmune diseases; those taking immune suppressants, such as steroids and anti-rejection drugs for liver transplantation; and those using interferon. Because it appears to interact with cytochrome p-450 metabolized substances [y](#), do not take during HCV treatment.

Safety Information: Very little available safety information. Reports of nausea, vomiting, GI upset, itching, dry nose and dry throat. No safety data available regarding children, pregnant or nursing mothers.

Interactions: May interact with immunosuppressants, anticoagulants and certain chemotherapy agents.

Lab Notes: May alter blood clotting tests results and lower blood pressure readings.

Note: Be sure not to confuse reishi mushrooms with a poisonous variety.

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Rhodiola (*Rhodiola rosea*)



Commonly called rose root, very little is known about this herb. No purported uses have yet been scientifically proven.

Attention for Liver Disease: Because it appears to interact with cytochrome p-450 metabolized substances [v](#), do not take during HCV treatment.

Safety Information: Very little available safety information, other than reports of dizziness, dry mouth, irritability and insomnia. Use very cautiously with bipolar disease since rhodiola may act as an antidepressant. No safety data available regarding children, pregnant or nursing mothers.

Interactions: May interact with any cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)).

Lab Notes: None reported

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SAMe (*S-adenosylmethionine*)

The human body produces the chemical SAMe. The body makes all it needs and is rarely deficient. Possibly effective for treatment of depression and osteoarthritis. Weak evidence suggests possible benefit for fibromyalgia and intrahepatic cholestasis.

Attention for Liver Disease: Claims that SAMe helps liver conditions have not been proven, although results are still pending from an NIH study looking at SAMe and alcoholic liver disease.

Safety Information: Headache, upset stomach, flatulence, nausea and diarrhea are common side effects. Anyone with Parkinson's or bipolar disorder should avoid SAMe.

Interactions: Avoid using if taking antidepressant medications as there is a risk of serotonin syndrome. Do not take if using cough medicine with dextromethorphan. May interact with Demerol, tramadol, or levodopa.

Lab Notes: None reported.

Note: SAMe is very expensive and unstable. Be sure to use a well-tested formulation.

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Saw Palmetto (*Serenoa repens*)



In the U.S., this berry was listed as an official drug in the beginning of the 20th century. Saw palmetto has been studied extensively with varying results. A recent, compelling study in the *Journal of the American Medical Association* (Sep 2011) showed no benefit for lower urinary tract symptoms, in particular benign prostatic hypertrophy (BPH).

Attention for Liver Disease: May prolong coagulation times. Two cases of liver inflammation were reported but contamination is suspected since even extremely high doses of saw palmetto did not cause liver injury in rats.

Safety Information: Saw Palmetto may increase bleeding risk. Testicular soreness, tender breasts and sexual dysfunction were reported by a few men. Most common side effects are gastric problems. Pregnant and nursing women should avoid. No conclusive safety information is available for children.

Interactions: Interacts with anticoagulant and contraceptive drugs.

Lab Notes: May alter liver function test results. If taking blood thinners, such as warfarin, may interfere with coagulation results.

Note: Saw Palmetto comes in many forms. Symptom relief may not occur for several months.

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Schisandra (*Schisandra chinensis* and *S. sphenanthera*)



Studies suggest possible improvement in liver function for hepatitis patients. Evidence points to improved concentration, coordination, and endurance in healthy adults.

Attention for Liver Disease: May lower liver function test results. Because it appears to interact with cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)), do not take during HCV treatment.

Safety Information: Probably safe for general use. May cause a variety of gastroenterological complaints or central nervous system depression. Pregnant and nursing mothers should avoid. The safety for children is not established.

Interactions: In lab studies, showed potential to interact with any cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)). However, no drug interactions in people have been reported.

Lab Notes: May alter liver function tests.

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Soy (*Glycine max*)



Soybeans have been used as a dietary staple for over 5000 years. Soy is purported to help many conditions, such as high cholesterol, osteoporosis and menopause symptoms. Research supports soy's effectiveness for lowering LDL cholesterol for people with LDLs greater than 160. Soy may be effective for other conditions, such as diabetes, diabetic neuropathy, diarrhea in infants, and kidney disease. The efficacy of soy on reducing breast cancer risk has not been established. Claims about soy's effectiveness in relieving hepatitis symptoms have not been substantiated.

Attention for Liver Disease: Soy phytoestrogens occasionally appear on lists of supplements that people with liver disease should not take, although no evidence was found to support this. Because it appears to interact with cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)), do not take during HCV treatment.

Safety Information: Soy has a good safety record. Gastrointestinal complaints, such as bloating and flatulence are the most common. Soy may lower thyroid levels, especially in infants. Safety has not been established for children, pregnant or nursing mothers.

Interactions: There is still controversy about the phytoestrogen properties in soy. For this reason, soy is not recommended for anyone with hormone-sensitive malignancies or those taking drugs, such as tamoxifen, to prevent disease recurrence. In lab studies, showed potential to interact with any cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)).

Lab Notes: Theoretically, may interfere with thyroid tests in children.

Note: Isoflavones are key, whether you use soy in your diet or as a supplement.

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St. John's Wort (*Hypericum perforatum*)



This herb has been studied extensively. Strong evidence of St. John's wort's effectiveness for treating mild to moderate depression. St. John's wort may relieve symptoms of menopause, PMS, and help with smoking cessation.

***Note:** Depression is a serious illness. Seek professional advice before using this or any herbal substance.*

Attention for Liver Disease: May alter liver function tests. There have been case reports of organ transplant rejection in those using St. John's wort with cyclosporine. Because it appears to interact with cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)), do not take during HCV treatment, especially if taking a protease or polymerase inhibitor.

Safety Information: Fatigue and gastric distress are the most common complaints. May cause sun sensitivity, especially at high doses. Bipolar patients should avoid. May cause sexual dysfunction, skin reactions, anxiety, dizziness, headache, and dry mouth. Patients with Alzheimer's should avoid St. John's wort. Safety has not been established for children. Pregnant or nursing mothers should avoid.

Interactions: May interact with any cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)). The list of drugs that St. John's Wort may interact with is much longer than what is included in this glossary. The FDA has a specific warning about using St. John's wort and indinavir, antiretrovirals, and other drugs. Do not take St. John's wort if you are taking antidepressants, **HCV and HIV protease inhibitors**, NRTI's, or immunosuppressive medications. There have been case reports of organ transplant rejection by those taking cyclosporine.

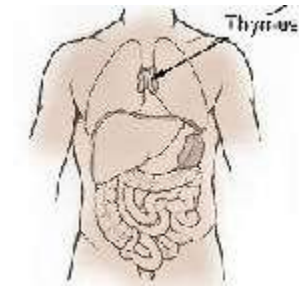
**Patients taking Incivek (telaprevir) or Victrelis (boceprevir) should not take St. John's wort (Hypericum perforatum) **

Lab Interactions: May alter liver function test results.

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T

Thymus Extract



The thymus gland plays an important role in our immune system. The rationale behind the use of thymus extract is that this will stimulate the immune system. Possibly effective for treatment of asthma, hay fever, food allergies, and upper respiratory infection.

Attention for Liver Disease: There is no evidence supporting the use of thymus extract for treatment of HCV or HBV. Thymus extract may lower platelets.

Safety Information: There are a number of safety concerns about the use of thymus extract. The most major of these is that since thymus extract is a cow product, there is risk of contamination, particularly Mad Cow disease. If you use thymus extract, choose a brand that is certified as free from infection.

Interactions: May interact with immunosuppressants.

Lab Notes: May lower platelets.

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Turmeric/Curcumin (*Curcuma longa*)



Curcumin is derived from turmeric which is sometimes used to flavor foods. In small amounts as a source of food, it is generally considered to be safe. The root or rhizome is the plant part that is used medicinally. In Chinese medicine it is used to alleviate stomach upset, arthritic pain and “low energy.” In lab and animal studies, curcumin has been found to have anti-inflammatory, antioxidant and anti-tumor properties. Whether this translates to humans is unknown. Research suggests curcumin may relieve heartburn. More research may reveal its value in treating other conditions.

Attention for Liver Disease: Some sources warn patients with liver disease to avoid curcumin, particularly large amounts over prolonged periods. However, there is also speculation that curcumin may be hepatoprotective. Curcumin may elevate liver function lab tests, but some sources disagree with this. May decrease blood-clotting ability. Patients with gall bladder diseases should avoid.

Safety Information: Patients with gallstones or any gall bladder obstruction should avoid curcumin. Should be avoided by patients undergoing chemotherapy. If taken in high doses or for prolonged time periods, curcumin may cause upset stomach. May cause hair loss and weaken the immune system. Pregnant and nursing women should avoid curcumin. Not enough evidence to recommend safe use for children.

Interactions: May interact with anticoagulants.

Lab Notes: May alter liver function tests and blood-clotting times. May lower blood pressure, cholesterol and blood glucose levels.

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V

Valerian (*Valeriana officinalis*)



Research has not substantiated the efficacy of valerian for treating insomnia.

Attention for Liver Disease: May be liver toxic, however, there are some doubts surround other claims of its hepatotoxic qualities, since all the reports used valerian in combination with other herbs. Until safety reports can be verified or disputed, it is recommended that people with liver disease avoid valerian or use extra caution, particularly if taking other supplements. Because it appears to interact with cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)), do not take during HCV treatment.

Safety Information: May cause daytime sleepiness. Use cautiously when driving or operating machinery. May cause headaches, dizziness, constipation, gastric complaints, nervousness, blurred vision, insomnia, light-headedness, tightness in the chest, restlessness and slowing or irregular heartbeat. Symptoms of withdrawal may occur if stopping after long-term use of valerian. Safety has not been established for children, pregnant or nursing mothers.

Interactions: May interact with muscle relaxants, sedatives, anti-anxiety, pain, anti-seizure, antidepressant, or other drugs or supplements that cause drowsiness. May interact with any cytochrome p-450 metabolized substances ([see About Cytochrome P-450 below](#)).

Lab Notes: None reported.

Note: Valerian may need to be taken on a regular basis for at least 4 weeks before results are evident.

Vitamin B12

Research published in *Gut* (July 2012) by Alba Rocco and colleagues showed that vitamin B12 supplementation may improve HCV treatment outcomes. Patients receiving 5000 mcg of B12 monthly had a significantly higher response to HCV antiviral therapy.

Attention for Liver Disease: Although the liver may store up to a year of B12, it is considered generally safe.

Safety Information: Generally safe.

Interactions: May interact with certain drugs, particularly those that suppress gastric acid.

Lab Notes: None reported.

Vitamin D

Research published in various journals in 2012 and 2013 showed that vitamin D supplementation may suppress HCV replication.

Attention for Liver Disease: Considered generally safe.

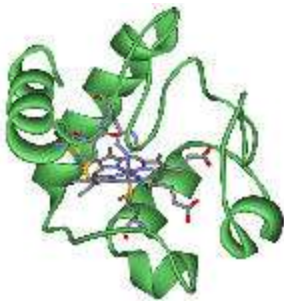
Safety Information: Generally safe, although high doses may raise calcium levels in the body.

Interactions: None reported.

Lab Notes: None reported.

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About Cytochrome P-450 (CYP-450)



CYP-450 refers to a group of enzymes that play an important role in drug metabolism. Enzymes are substances your body makes and metabolism refers to the conversion of chemicals into something your body can use. Certain diseases, particularly a poorly functioning liver, can interfere with drug metabolism that relies on CYP-450. This means that you could get too little or too much of any of the drugs that interact with each other.

Drugs and substances that are metabolized by the same enzymes can compete with one another for metabolism. This means drugs could be toxic rather than therapeutic. It is also possible that what substance or drug you are taking will not work. There are hundreds of drugs and dietary substances that can interact with any CYP-450 metabolized substances.

Just because a substance has the potential to interact with another substance does not mean that you should not take it or that something bad will happen. It means the potential is there and you should talk about this with your medical provider. Your pharmacist is another resource to consult. There might be safer ways to take certain combinations of substances, such as taking one in the morning and another at night or not taking different substances within 2 hours of each other.

Here is a partial list of some drugs, foods, and dietary supplements that use CYP-450 for metabolism:

- Protease inhibitors (boceprevir and telaprevir), NSAIDs, anesthesia, pain medications, protease inhibitors, non-nucleoside analogues, hormones, methadone, antibiotics, antifungals, antihistamines, anticonvulsants, antidepressants, antipsychotics, anti-anxiety, sedatives, sleeping medications, lipid-lowering agents (statins), transplant anti-rejection drugs, anti-parasite drugs, diabetic, cardiac, gastrointestinal drugs, chemotherapy agents, drugs containing ergot, methadone and Viagra.
- Broccoli, Brussels sprouts, cabbage, caffeine, cannabinoids (marijuana), cauliflower, charbroiled meats, garlic, grapefruit juice, green tea, star fruit and tobacco.

- Black cohosh, bloodroot, cat's claw, chamomile, chaparral, chasteberry, echinacea, ginkgo, ginseng, goldenseal, hops, milk thistle, oregano, peppermint, red clover, schisandra, soy, St. John's wort, wild cherry, and yucca.

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