



milk thistle

Milk thistle (*Silybum marianum*) is an annual herb native to the Mediterranean region. It is a member of the aster family (asteraceae or compositae), which also includes daisies, artichokes, sunflowers, and echinacea. Its importance in medicine has been recognized for more than 2,000 years.

In the first century C.E., Dioscorides, a Greek herbalist, recommended the plant for the treatment of poisonous snake bites, and Pliny the Elder found it useful for “carrying off bile.” Historically, milk thistle has commonly been used to treat various digestive and liver ailments. This herb has been called “the most well-researched plant in the treatment of liver disease.” Recently, milk thistle has also been the focus of research into its potential to prevent and treat cancer.

The part of the milk thistle plant used medicinally is the seed, which contains many different compounds. The most extensively researched of these chemicals is a class of compounds called “silymarins,” which include silibinin, silidianin, and silicristin. These chemicals have antioxidant activities and also increase expression of genes in the liver responsible for repairing damaged cells. Most dietary supplements are standardized to contain 80 percent silymarin.

» Recent Research

Multiple clinical trials have evaluated milk thistle’s usefulness in liver diseases. One such study administered 160 mg of milk thistle three times daily for four weeks to 17 patients with hepatitis C. Another 17 volunteers with hepatitis C acted as the comparison group. None of the volunteers were taking antiviral medication for their condition. Even though viral load was not decreased, liver enzymes (indicating liver cell damage) were significantly lower in those people who took the milk thistle compared to those who did not. A review of the research into the use of milk thistle for the treatment of acute viral hepatitis concluded that silymarin “decreases complications, hastens recovery, and shortens hospital stays.”

In animal experiments, milk thistle has been shown helpful for gallbladder conditions. In one such study in which 100 mg/kg body weight of silymarin was administered for five days, this compound prevented experimental gallstone formation. This investigation also showed that silymarin increased bile excretion, which is a frequent clinical goal in the treatment of different liver conditions. Research has also confirmed milk thistle’s benefits for mushroom poisoning, liver damage from environmental pollutants, and toxicity from drugs.

» Herb-Drug Interactions

The question of whether a dietary supplement interferes with drugs is an important consideration. Milk thistle has been evaluated in a human clinical trial for its effects on liver detoxification enzymes. These enzymes are involved

in detoxifying drugs and other chemicals. In a randomized clinical trial, six men and six women were given 175 mg milk thistle standardized to 80 percent silymarin twice daily for 28 days. There were no differences in detoxification enzyme activity. The researchers concluded that milk thistle in humans did not affect these enzymes.

A second human clinical trial showed that taking 175 mg milk thistle (confirmed to contain 153 mg silymarin) three times a day for three weeks did not interfere with indinavir (a protease inhibitor used in HIV treatment) therapy. As with all dietary supplements, if you are taking any medications, consult a healthcare provider knowledgeable in supplement-drug interactions before combining drugs with dietary supplements.

» Dosage

Milk thistle is available in different forms, including whole seeds, capsules, and tinctures. Additionally, milk thistle extract is available as a highly concentrated silymarin extract (usually approximately 80 percent silymarin) or as a silymarin-phosphatidylcholine combination. Phosphatidylcholine is a key element of cell membranes that may increase the absorption and activity of silymarin.

The following dosages are for adults:

- Dried seeds: 12 to 15 grams (200 to 400 mg silymarin) per day.
- Standardized extract:
 - Silymarin-phosphatidylcholine complex: 100 to 200 mg twice daily.
 - Silymarin: 120 mg silymarin twice daily (or three times daily for liver damage from alcohol, drugs, or chemicals).

—John Neustadt, ND

“Effect of milk thistle on the pharmacokinetics of indinavir in healthy volunteers” by S. C. Piscitelli et al., *Pharmacotherapy*, 5/02 ● “The effect of *Silybum marianum* on the viral load of Hispanic patients with chronic hepatitis C” by F. Rodriguez-Perez et al., *Am J Gastroenterol*, 2002 ● “Herbal medicines for liver diseases” by R. K. Dhiman and Y. K. Chawla, *Dig Dis Sci*, 10/05 ● “In vivo assessment of botanical supplementation on human cytochrome P450 phenotypes: *Citrus aurantium*, *Echinacea purpurea*, milk thistle, and saw palmetto” by B. J. Gurley et al., *Clin Pharmacol Ther*, 11/04