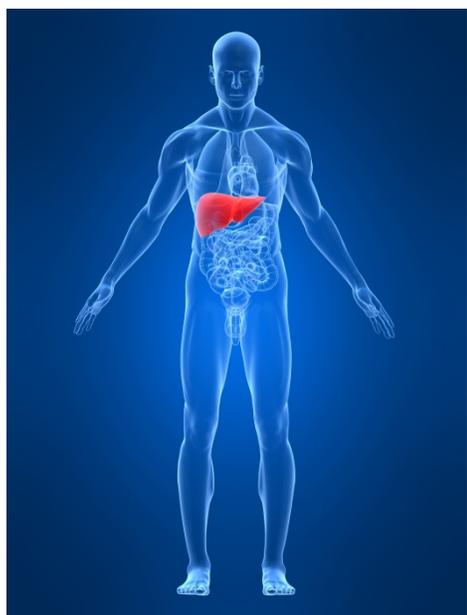


get the facts

Hepatitis C: A Focus on Dietary Supplements



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Hepatitis C is a liver disease caused by a virus. It is usually chronic (long-lasting), but most people do not have any symptoms until the virus causes liver damage, which can take 10 or more years to happen. Without medical treatment, chronic hepatitis C can eventually cause liver cancer or liver failure. Conventional medical treatments are available for chronic hepatitis C. Some people with hepatitis C also try complementary health approaches, especially dietary supplements. This fact sheet provides basic information on hepatitis C, summarizes scientific research on selected supplements, and suggests sources for additional information.

Key Facts

- **Are Dietary Supplements for Hepatitis C Safe?**
 - Colloidal silver is **not** safe; it can cause irreversible side effects.
 - Data on the safety of other supplements is limited. However, some can have side effects or may interact in harmful ways with medications, and some may be unsafe for people with certain health problems.
 - If you have hepatitis C, check with your health care provider before using any dietary supplement to make sure that it is safe for you and compatible with any medical treatment that you are receiving for hepatitis C or any other health problem.
- **Are Dietary Supplements for Hepatitis C Effective?**
 - No dietary supplement has been shown to be effective for hepatitis C or its complications.
 - The results of research supported by the National Center for Complementary and Alternative Medicine (NCCAM) and National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) have shown that silymarin, the active extract of milk thistle and the most popular complementary health product taken by people with liver disease, was no more effective than placebo in people with hepatitis C.

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- Research on other dietary supplements for hepatitis C, such as zinc, licorice root (or its extract glycyrrhizin), S-adenosyl-L-methionine (SAME), and lactoferrin, is in its early stages, and no firm conclusions can be reached about the potential effectiveness of these supplements.

Keep in Mind

- It is important **not** to replace conventional medical therapy for hepatitis C with dietary supplements or other approaches that have not been shown to be effective.
- Tell all your health care providers about any complementary health approaches you use. Give them a full picture of what you do to manage your health. This will help ensure coordinated and safe care.

About Hepatitis C

Hepatitis C, a contagious liver disease, is caused by the hepatitis C virus. People can get hepatitis C through contact with blood from a person who is already infected or, less commonly, through having sex with an infected person. The infection usually becomes chronic. Chronic hepatitis C often is treated with drugs that can eliminate the virus. This may slow or stop liver damage, but the drugs may cause side effects, and for some people, treatment is ineffective. An estimated 3.2 million Americans have chronic hepatitis C. To learn more about hepatitis C, visit the NIDDK Web site at digestive.niddk.nih.gov/ddiseases/pubs/hepatitis/.

Use of Herbal Supplements and Other Complementary Approaches for Hepatitis C

Several herbal supplements have been studied for hepatitis C, and substantial numbers of people with hepatitis C have tried herbal supplements. For example, a survey of 1,145 participants in the HALT-C (Hepatitis C Antiviral Long-Term Treatment Against Cirrhosis) trial, a study supported by the National Institutes of Health (NIH), found that 23 percent of the participants were using herbal products. Although participants reported using many different herbal products, silymarin (milk thistle) was by far the most common. Another study, which surveyed 120 adults with hepatitis C, found that many used a variety of complementary health approaches, including multivitamins, herbal remedies, massage, deep breathing exercises, meditation, progressive relaxation, and yoga.

What the Science Says

No dietary supplement has been shown to be effective for hepatitis C. This section summarizes what is known about the safety and effectiveness of milk thistle and some of the other dietary supplements studied for hepatitis C.

- **Milk thistle** (scientific name *Silybum marianum*) is a plant from the aster family. Silymarin is an active component of milk thistle believed to be responsible for the herb's health-related properties. Milk thistle has been used in Europe for treating liver disease and jaundice since the 16th century. In the United States, silymarin is the most popular dietary

supplement taken by people with liver disease. However, two rigorously designed studies of silymarin in people with hepatitis C did not show any benefit.

- A 2012 controlled clinical trial, cofunded by NCCAM and NIDDK, showed that two higher-than-usual doses of silymarin were no better than placebo in reducing the high blood levels of an enzyme that indicates liver damage. In the study, 154 people who had not responded to standard antiviral treatment for chronic hepatitis C were randomly assigned to receive 420 mg of silymarin, 700 mg of silymarin, or placebo three times per day for 24 weeks. At the end of the treatment period, blood levels of the enzyme were similar in all three groups.
- Results of the HALT-C study mentioned above suggested that silymarin use by hepatitis C patients was associated with fewer and milder symptoms of liver disease and somewhat better quality of life, but there was no change in virus activity or liver inflammation. The researchers emphasized that this was a retrospective study (one that examined the medical and lifestyle histories of the participants). Its finding of improved quality of life in patients taking silymarin was not confirmed in the more rigorous 2012 study described above.

Safety. Available evidence from clinical trials in people with liver disease suggests that milk thistle is generally well-tolerated. Side effects can include a laxative effect, nausea, diarrhea, abdominal bloating and pain, and occasional allergic reactions. In NIH-funded studies of silymarin in people with hepatitis C that were completed in 2010 and 2012, the frequency of side effects was similar in people taking silymarin and those taking placebos. However, these studies were not large enough to show with certainty that silymarin is safe for people with chronic hepatitis C.

Other supplements have been studied for hepatitis C, but overall, no benefits have been clearly demonstrated. These supplements include the following:

- **Probiotics** are live microorganisms that are intended to have a health benefit when consumed. Research hasn't produced any clear evidence that probiotics are helpful in people with hepatitis C. Most people can use probiotics without experiencing any side effects—or with only mild gastrointestinal side effects such as intestinal gas—but there have been some case reports of serious adverse effects in people with underlying serious health conditions.
- Preliminary studies, most of which were conducted outside the United States, have examined the use of **zinc** for hepatitis C. Zinc supplements might help to correct zinc deficiencies associated with hepatitis C or reduce some symptoms, but the evidence for these possible benefits is limited. Zinc is generally considered to be safe when used appropriately, but it can be toxic if taken in excessive amounts.
- A few preliminary studies have looked at the effects of combining supplements such as **lactoferrin**, **SAMe**, or zinc with conventional drug therapy for hepatitis C. The evidence is not sufficient to draw clear conclusions about benefit or safety.

- **Glycyrrhizin**—a compound found in licorice root—has been tested in a few clinical trials in hepatitis C patients, but there is currently not enough evidence to determine if it is helpful. In large amounts, glycyrrhizin or licorice can be dangerous in people with a history of hypertension (high blood pressure), kidney failure, or cardiovascular diseases.
- Preliminary studies have examined the potential of the following products for treating chronic hepatitis C: **TJ-108** (a mixture of herbs used in Japanese Kampo medicine), **schisandra**, **oxymatrine** (an extract from the sophora root), and **thymus extract**. The limited research on these products has not produced convincing evidence that they are helpful for hepatitis C.
- **Colloidal silver** has been suggested as a treatment for hepatitis C, but there is currently no research to support its use for this purpose. Colloidal silver is known to cause serious side effects, including a permanent bluish discoloration of the skin called argyria (for more information, see the NCCAM fact sheet *Colloidal Silver* at nccam.nih.gov/health/silver).

NCCAM-Funded Research

NCCAM-supported research includes projects studying:

- Herbal combinations for boosting antioxidant activity to treat liver disease
- Potential drugs for treating hepatitis C derived from rare and endangered plants.

If You Are Considering Taking a Dietary Supplement for Hepatitis C

- Do not use any complementary health approach to replace conventional treatments for hepatitis C or as a reason to postpone seeing your health care provider about any medical problem.
- Be aware that dietary supplements may have side effects or interact with conventional medical treatments. To learn more about using supplements, see the NCCAM fact sheet *Using Dietary Supplements Wisely* at nccam.nih.gov/health/supplements/wiseuse.htm.
- If you are pregnant or nursing a child, or if you are considering giving a child a dietary supplement, it is especially important to consult your (or your child's) health care provider. Supplements can act like drugs, and many have not been tested in pregnant women, nursing mothers, or children.
- Tell all your health care providers about any complementary health approaches you use. Give them a full picture of what you do to manage your health. This will help ensure coordinated and safe care. For tips about talking with your health care providers about complementary health approaches, see NCCAM's Time to Talk campaign at nccam.nih.gov/timetotalk.

Key References

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For More Information

NCCAM Clearinghouse

The NCCAM Clearinghouse provides information on NCCAM and complementary health approaches, including publications and searches of Federal databases of scientific and medical literature. The Clearinghouse does not provide medical advice, treatment recommendations, or referrals to practitioners.

Toll-free in the U.S.: 1-888-644-6226

TTY (for deaf and hard-of-hearing callers): 1-866-464-3615

Web site: nccam.nih.gov

E-mail: info@nccam.nih.gov

National Digestive Diseases Information Clearinghouse

A service of the National Institute of Diabetes and Digestive and Kidney Diseases, the clearinghouse responds to inquiries and offers publications. For a list of publications on hepatitis, go to digestive.niddk.nih.gov/ddiseases/pubs/hepatitis.

Web site: www.digestive.niddk.nih.gov
Toll-free in the U.S.: 1-800-891-5389

National Institute of Allergy and Infectious Diseases (NIAID)

NIAID conducts and supports basic and applied research to better understand, treat, and ultimately prevent infectious, immunologic, and allergic diseases.

Web site: www.niaid.nih.gov

Centers for Disease Control and Prevention (CDC)

The CDC is one of the major operating components of the U.S. Department of Health and Human Services. CDC collaborates to create the expertise, information, and tools that people and communities need to protect their health. For its **National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention**, go to www.cdc.gov/nchhstp.

Web site: www.cdc.gov

NIH Clinical Research Trials and You

The National Institutes of Health (NIH) has created a Web site, NIH Clinical Research Trials and You, to help people learn about clinical trials, why they matter, and how to participate. The site includes questions and answers about clinical trials, guidance on how to find clinical trials through ClinicalTrials.gov and other resources, and stories about the personal experiences of clinical trial participants. Clinical trials are necessary to find better ways to prevent, diagnose, and treat diseases.

Web site: www.nih.gov/health/clinicaltrials/

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Web site: www.ncbi.nlm.nih.gov/pubmed

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