

Consumer Advisory

...alerts and other bulletins about CAM

National Center for Complementary and Alternative Medicine at the National Institutes of Health, HHS

Colloidal Silver Products

This fact sheet provides a general overview of colloidal silver products, discusses scientific research findings on their use for health purposes, and suggests additional sources of information.

Key Points

- ◆ Colloidal silver products consist of tiny silver particles suspended in liquid. They are usually marketed as dietary supplements (see Question 1).
- ◆ Over-the-counter colloidal silver products are not considered by the U.S. Food and Drug Administration (FDA) to be generally recognized as safe and effective for diseases and conditions.
- ◆ The FDA has taken action against a number of colloidal silver companies (such as Web sites) for making drug-like claims about their products.
- ◆ Colloidal silver can cause serious side effects. One is argyria, a bluish-gray discoloration of the body. Argyria is not treatable or reversible.
- ◆ If you are considering using a colloidal silver product, talk with all your health care providers. Discussing its use with your health care team is important for your safety and helps each provider make sure that all aspects of your health care are working together.

1. What are colloidal silver products?

Silver is a metallic element that is mined as a precious metal. It has various industrial uses—for example, in jewelry, silverware, electronic equipment, dental fillings, photographic processing, and disinfecting water. People are commonly exposed to silver, usually in tiny amounts, through the environment (such as the air), drinking water, and food, and possibly their work or hobbies.¹ Silver has no known biological function in living organisms.

Silver has had some medicinal uses going back for centuries. However, more modern and less toxic drugs have eliminated most of those uses. A few prescription drugs containing silver are still available. For example, silver nitrate can be used to prevent an eye condition called conjunctivitis in newborn babies and to treat certain

skin conditions, such as corns and warts. Another drug, silver sulfadiazine, can be used to treat burns. These drugs are applied to the body (i.e., they are not taken internally), and they can have negative side effects.

Colloidal silver products consist of tiny silver particles suspended in a liquid base. Sometimes other ingredients are added, such as proteins, coloring, etc. The products are usually taken by mouth (in which case the products are considered dietary supplements; see the text box below). Some other types are sprayed, applied to the skin, or injected into a vein.

About Dietary Supplements

Dietary supplements were defined in a law passed by Congress in 1994. A dietary supplement must meet all of the following conditions:

- ◆ It is a product (other than tobacco) intended to supplement the diet, which contains one or more of the following: vitamins; minerals; herbs or other botanicals; amino acids; or any combination of the above ingredients.
- ◆ It is intended to be taken in tablet, capsule, powder, softgel, gelcap, or liquid form.
- ◆ It is not represented for use as a conventional food or as a sole item of a meal or the diet.
- ◆ It is labeled as being a dietary supplement.

2. For what health purposes are colloidal silver products marketed?

Colloidal silver products are often marketed with various unproven health-related claims. Examples include that they benefit the immune system; kill disease-causing agents such as bacteria, viruses, and fungi; are an alternative to prescription antibiotics; or treat diseases such as cancer, HIV/AIDS, tuberculosis, syphilis, scarlet fever, shingles, herpes, pneumonia, and prostatitis (inflammation of the prostate).

3. Do colloidal silver products work?

Reviews in the scientific literature on colloidal silver products have concluded that²⁻⁵:

- ◆ Silver has no known function in the body.
- ◆ Silver is not an essential mineral supplement or a cure-all and should not be promoted as such.
- ◆ Claims that there can be a "deficiency" of silver in the body and that such a deficiency can lead to disease are unfounded.
- ◆ Claims made about the effectiveness of colloidal silver products for numerous diseases are unsupported scientifically.
- ◆ Colloidal silver products can have serious side effects (discussed further below).
- ◆ Laboratory analysis has shown that the amounts of silver in supplements vary greatly, which can pose risks to the consumer.

4. What are the risks of using these products?

Animal studies have shown that silver builds up in the tissues of the body. In humans, buildup of silver from colloidal silver can lead to a side effect called argyria. It causes a bluish-gray discoloration of the skin, other organs, deep tissues, nails, and gums. Argyria cannot be treated or reversed, and it is permanent. While it is not known how argyria occurs, it is thought that silver combines with protein, forming complexes that deposit in the skin and are processed by sunlight (as in traditional photography).^{6,7} Other side effects from using colloidal silver products may include neurologic problems (such as seizures), kidney damage, stomach distress, headaches, fatigue, and skin irritation. Colloidal silver may interfere with the body's absorption of the following drugs: penicillamine, quinolones, tetracyclines, and thyroxine.⁵

5. Does the Government regulate dietary supplements containing colloidal silver?

Yes, the Government regulates them, but differently than drugs. The Dietary Supplement Health and Education Act of 1994 places dietary supplements in a special category of foods. This category is regulated differently than other foods and than drugs. For example, manufacturers of dietary supplements, unlike manufacturers of drugs, do not have to prove their product's safety and effectiveness to the FDA before it is marketed. If the product is found to be unsafe after it is marketed, the FDA can take certain actions, such as removing it from the marketplace. The FDA issued a ruling in 1999 that no products containing colloidal silver are generally recognized as safe and effective. The FDA and the Federal Trade Commission (FTC) have sent warning letters to the operators of many Web sites that market colloidal silver with drug-like claims

(i.e., that their product diagnoses, treats, cures, or prevents disease).

6. What should people do who are considering or using colloidal silver?

If you are considering or using a colloidal silver product, or any type of complementary and alternative medicine (CAM), talk with all your health care providers. Discussing its use is important for your safety and helps each provider make sure that all aspects of your health care are working together. This is especially important if you are pregnant, nursing a baby, or considering treating a child. You can also learn about FDA and FTC actions on misrepresentations for colloidal silver (see "For More Information" below).

Conventional Medicine

Conventional medicine is medicine as practiced by holders of M.D. (medical doctor) or D.O. (doctor of osteopathy) degrees and by their allied health professionals, such as nurses, physical therapists, and dietitians. Other terms for conventional medicine include allopathy; Western, mainstream, orthodox, and regular medicine; and biomedicine.

Complementary and Alternative Medicine (CAM)

Health care practices and products that are not presently considered to be part of conventional medicine are called CAM. **Complementary** medicine is used **together with** conventional medicine. **Alternative** medicine is used **in place of** conventional medicine. There is scientific evidence for the effectiveness of some CAM treatments. But for most, there are key questions yet to be answered through well-designed scientific studies, such as whether they are safe and work for the diseases or conditions for which they are used. The National Center for Complementary and Alternative Medicine (NCCAM), part of the National Institutes of Health (NIH), is the Federal Government's lead agency for scientific research on CAM.

For More Information

NCCAM Clearinghouse

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

International: 301-519-3153

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

E-mail: info@nccam.nih.gov

Web site: nccam.nih.gov

Address: NCCAM Clearinghouse, P.O. Box 7923

Gaithersburg, MD 20898-7923

Fax: 1-866-464-3616

Fax-on-Demand service: 1-888-644-6226

The NCCAM Clearinghouse provides free publications and searches of Federal databases of medical and scientific literature. The Clearinghouse does not provide medical advice, treatment recommendations, or referrals to practitioners.

U.S. Food and Drug Administration (FDA)

Web site: www.fda.gov

Toll-free in the U.S.: 1-888-463-6332

The FDA monitors—and regulates for safety—foods, medicines, medical devices, cosmetics, and radiation-emitting consumer products.

- ◆ Center for Food Safety and Applied Nutrition (CFSAN)
CFSAN's Web site on dietary supplements is at www.cfsan.fda.gov/~dms/supplmnt.html
Toll-free in the U.S.: 1-888-723-3366

CFSAN oversees the safety and labeling of supplements, foods, and cosmetics. It has information on dietary supplements.

- ◆ MedWatch
Web site: www.fda.gov/medwatch/report/consumer/consumer.htm
Toll-free in the U.S.: 1-888-463-6332

MedWatch is the FDA's safety information and adverse event reporting program. Consumers or providers may file a report if they have a serious problem that they suspect is associated with a dietary supplement.

Federal Trade Commission (FTC)

Web site: www.ftc.gov

Toll-free in the U.S.: 1-877-382-4357

The FTC works to prevent fraudulent, deceptive, and unfair business practices in the marketplace and to inform consumers so that they can spot, stop, and avoid these practices.

CAM on PubMed

Web site: www.nlm.nih.gov/nccam/camonpubmed.html

CAM on PubMed, a database on the Web developed jointly by NCCAM and the National Library of Medicine, offers citations to (and in most cases, abstracts of) CAM articles in scientifically based journals. Some records link to the full text of the article.

References

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