

## 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. To find out more about topics and resources mentioned in this fact sheet, see “For More 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.
- Tell your health care providers about any complementary and alternative practices you use. Give them a full picture of what you do to manage your health. This will help ensure coordinated and safe care.

### 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.<sup>1</sup> 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) that is intended to supplement the diet and that 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 that<sup>2-5</sup>:

- 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).<sup>6,7</sup> 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.<sup>5</sup>

## 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?

Tell your health care providers about any complementary and alternative practices you use. Give them a full picture of what you do to manage your health. This will help ensure coordinated and safe care. This is especially important if you are pregnant, nursing a baby, or considering treating a child.

## References

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3. Gulbranson SH, Hud JA, Hansen RC. Argyria following the use of dietary supplements containing colloidal silver protein. *Cutis*. 2000;66(5):373-374.
4. FDA bans colloidal silver products, cites lack of data. *FDA Consumer*. 1999;33(6). Accessed at [http://www.fda.gov/fdac/departs/1999/699\\_upd.html](http://www.fda.gov/fdac/departs/1999/699_upd.html) on December 11, 2006.
5. Natural Medicines Comprehensive Database. Colloidal silver. Natural Medicines Comprehensive Database Web site. Accessed at <http://www.naturaldatabase.com> on December 11, 2006.
6. White JM, Powell AM, Brady K, et al. Severe generalized argyria secondary to ingestion of colloidal silver protein. *Clinical and Experimental Dermatology*. 2003;28(3):254-256.
7. Hori K, Martin TG, Rainey P, et al. Believe it or not—silver still poisons! *Veterinary and Human Toxicology*. 2002;44(5):291-292.

## For More Information

### NCCAM Clearinghouse

The National Center for Complementary and Alternative Medicine (NCCAM) Clearinghouse provides information on complementary and alternative medicine (CAM) and NCCAM, 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](http://nccam.nih.gov)

E-mail: [info@nccam.nih.gov](mailto:info@nccam.nih.gov)

## **U.S. Food and Drug Administration (FDA)**

The FDA oversees the safety of many products, such as foods (including dietary supplements), medicines, medical devices, and cosmetics.

Web site: [www.fda.gov](http://www.fda.gov)

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

## **Federal Trade Commission (FTC)**

The FTC is the Federal agency charged with protecting the public against unfair and deceptive business practices. A key area of its work is the regulation of advertising (except for prescription drugs and medical devices).

Web site: [www.ftc.gov](http://www.ftc.gov)

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

## **PubMed®**

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