

Garlic

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What is it?

Garlic (*Allium sativum* L.) is a common garden plant with an edible bulblike root. Closely related to onion and leek, it is used for cooking and medicinal purposes.

When fresh garlic is crushed or chopped, enzymes within the clove are released and a sulphur compound called allicin is created. Sulphur-containing compounds are often effective antibiotics. Penicillin is one such example.

Of the sulphur compounds found in garlic, allicin is the most abundant as well as widely studied and appears to be associated with many of the plant's medicinal benefits. But several other sulphur compounds appear to have medicinal benefits. These compounds, found in different forms of garlic, include ajoene and S-allyl cysteine.

What do HIV-positive people use this supplement for?

— To prevent and fight infections

Historically, garlic has been used to treat infections, including those caused by certain bacteria, parasites and fungi. People with HIV often use garlic to prevent infections associated with HIV, such as candidiasis (thrush) and other fungal infections, as well as mycobacterium avium-intracellulare, cryptosporidium and other parasites. Garlic has inhibited the growth of these microbes in laboratory studies. Besides being used to treat mild infections or diarrhea, garlic may be used in conjunction with antibiotics for more serious infections. Laboratory studies demonstrate that garlic works well in concert

with antibiotics like amphotericin B. Fresh garlic and a few commercial garlic extracts are the most well-documented forms used to fight infections.

— To strengthen the immune system

Some people living with HIV use garlic to enhance the immune system. Garlic may increase the number of natural killer cells, which destroy white cells that are cancerous or infected by viruses. As HIV disease progresses, natural killer cells become depleted, and people living with HIV become more vulnerable to cancers and viral infections. One small study done in the late 1980s involved seven HIV-positive people taking a daily dose of five grams of aged garlic extract. The study found that the subjects' natural killer cells returned to normal in 12 weeks. The immune benefits of garlic are not yet associated with any of its specific components. Fresh garlic and garlic extract may be as effective as the aged extract.

— To lower cholesterol and triglycerides

Elevated levels of cholesterol and triglycerides are becoming a common problem in HIV disease and may be associated with the use of HAART (highly active antiretroviral therapy). There are, however, no studies, and there is virtually no anecdotal information about the use of garlic to lower cholesterol and triglycerides in people with HIV. Garlic is widely used by HIV-negative people for these problems, and a 1993 review of 28 trials seems to confirm that garlic is effective in lowering cholesterol. But this use of garlic is controversial, since other studies have found the plant to have no beneficial effects on cholesterol or triglycerides. This discrepancy may relate to the different types of garlic used and the

quality of their preparation. Aged garlic extract has been used in some of the most positive studies examining the plant's effects on cholesterol and triglycerides, but fresh garlic and garlic extract have been used in others.

— To slow the production of HIV

Garlic may slow the production of HIV by stimulating natural killer cells. At least one of garlic's sulphur-containing compounds may also have a direct antiviral effect. Laboratory studies show that ajoene inhibits the replication of HIV. Ajoene is found in large quantities in oil-macerated garlic only.

Available forms and usage

Fresh garlic is widely available in supermarkets and can be eaten raw or cooked. If cooked, it should be chopped and left to sit briefly, allowing the enzymes in the clove to produce allicin before these enzymes are destroyed by heat.

Powdered garlic extract — often sold in soft-gel capsules — offers health benefits similar to fresh garlic. This form is available in health food stores and some drugstores and is often sold according to its allicin “potential.” Allicin is produced only when the enzymes contained in the capsule are released in the gut. Purchasing a brand of capsule with an enteric coating (specially designed to stop the capsule from breaking down in the stomach) will protect both these enzymes from stomach acids and the stomach from the irritating effects of garlic. A good-quality extract should contain an allicin potential of 4,000 micrograms or 10 milligrams of allicin.

Aged garlic extract has the longest shelf life of any garlic product. It can be obtained through complementary health-care providers, health food stores as some drugstores. The primary sulphur compound found in this form of garlic is S-allyl cysteine.

Garlic oil macerate is the only garlic product that contains high amounts of ajoene. Other garlic oil products have little medicinal effect, so look for the words “oil macerate” on the label. Garlic oil macerates are usually sold in soft-gel capsules, which must be protected from air to retain their potency. This form of garlic is difficult to find in

North America. Ask an herbalist or staff at a health food store where you might find it.

Cautions and concerns

Large doses of garlic (the equivalent of 10 or more cloves a day) may interact with protease inhibitors. Two case studies have shown that garlic slows the liver's ability to metabolize ritonavir. By doing so, it increases levels of ritonavir in the body and may increase the drug's side effects. Unfortunately, this is probably true for all protease inhibitors.

It is best to avoid combining garlic with drugs that have an anti-coagulant effect such as acetylsalicylic acid (Aspirin) and warfarin.

Garlic has few side effects, but large doses can cause stomach upset or irritate the intestine. This is particularly true of raw garlic. The plant may also kill normal, beneficial bacteria in the gut, particularly when taken in large amounts. One solution to this side effect is to take probiotic supplements — capsules containing “friendly” gut bacteria — in conjunction with garlic.

Garlic's characteristic smell is often present on the breath and exuded through the skin when large amounts of the plant are eaten. Although they may be more expensive, odour-free formulas are now available and appear to be as effective as other garlic products.

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