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Herbs

Garlic

What are the folklore uses of garlic?

Garlic traditionally has been used as a natural antibiotic thought to protect against infection, to lower blood pressure, and to treat atherosclerosis, asthma, arthritis, cancer, and circulatory problems.

What is garlic?

Garlic grows in the form of a bulb. It is used in cooking to enhance the flavor, and it may also have some medicinal value.

How does garlic work?

Allicin, SAC (S-Allyl-Cystine) and ajoene are the three active compounds found, in varying amounts, in fresh garlic, many commercially produced garlic pills, and in garlic powder. Allicin, a chemical formed when garlic is crushed, appears to have antibacterial properties. SAC has been shown to be effective against the initiation of tumors in animals. Ajoene appears to be an anti-blood clotting agent.

Garlic supplements contain alliin, an odorless precursor of the garlic smell in the active compounds of allicin and ajoene. The enzyme alliinase is needed to convert alliin to allicin and ajoene.

How effective is garlic?

Research on medicinal uses of allicin in fresh garlic indicate it can lower blood pressure and cholesterol. Ajoene may be useful in slowing blood clotting. In this way, garlic protects against heart disease and stroke. These results do not apply to garlic supplements, however. Studies also show that fresh garlic, in large quantities, can lower cholesterol levels.

Because garlic thins the blood, it may lower blood pressure.

Other findings suggest that high levels of garlic may prevent development of cancer by stimulating the immune system and hindering

growth of cancer cells. Laboratory studies show that garlic can inhibit bacteria growth and may fight infection. However, those results are unproven in humans.

How does cooking affect garlic?

Cooking preserves allicin, since heat inactivates the enzyme that weakens its antibacterial effect. Cooking garlic also decreases the likelihood it will cause gastrointestinal disturbances.

What are the recommended forms and dosages of garlic?

Research has shown that relatively large amounts must be consumed for garlic to be medicinally beneficial: one to five or more cloves a day.

A third of a teaspoon of garlic powder equals one dose of the most potent commercial supplement. If you take garlic supplements regularly, read the labels to identify the active compounds and their amounts.

Dried garlic does not contain the active compounds of allicin or ajoene, but does contain alliin. The enzyme alliinase may be present in garlic that has been dried at low temperatures, but it is unstable in the presence of acid. When dried garlic is consumed and reaches the stomach, the alliinase is destroyed by stomach acid; therefore, not much alliin is converted to



allicin. Thus, garlic pills are most effective if they are enteric-coated to resist stomach acids. Some 300 to 900 milligrams of a garlic supplement are required daily to produce beneficial medicinal effects.

What are the side effects or safety concerns of taking garlic?

Consuming moderate amounts of garlic each day should not pose a health risk for most people. However, consumption of large amounts can result in heartburn, flatulence, gastrointestinal problems, increased blood clotting time, or allergic reactions.

Individuals who take aspirin or other medicine that thins the blood should check with their physicians before taking large doses of garlic because of its blood-thinning characteristics.

Conclusion:

Garlic appears to have several health benefits. It can reduce blood cholesterol and blood

pressure. It may help reduce blood clotting, and therefore prevent blood clots from triggering strokes. There is some evidence that garlic may also help prevent cancer and fight infections. Thus, garlic may have health benefits, but not all forms of garlic are equal. Fresh garlic is the best. While garlic cannot “fix” a poor diet or mend an unhealthy lifestyle, it certainly can compliment a good diet.

Sources:

Tyler, V. 1993. The Honest Herbal. The Haworth Press, Binghamton, N.Y. 3rd Edition. pp. 139-143.

Golub, C., Pungent, Powerful Garlic May Help Fight Infection, Heart Disease, Environmental Nutrition, December 1995. (18) 12. pp. 5-6.

Ward, E.M., Respect Grows for Botanical, But Can You Trust the Herbs You Buy? Environmental Nutrition, May 1995. (18) 5. pp. 5-6.

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