Angina

Chest pain due to reduced blood flow to the heart is known as angina or angina pectoris. Hardening of the coronary arteries (atherosclerosis) that feed the heart is usually the underlying problem. Therefore it is very important that anyone with angina read the section on atherosclerosis; the information there is important for treatment and prevention of angina. The only items covered here are those that specifically relate to angina. Coronary artery spasms may also cause angina.

There are three main types of angina. The first is called stable angina. This type of chest pain comes on during exercise and is both common and predictable. Stable angina is most associated with atherosclerosis. A second type, called variant angina, can occur at rest or during exercise. This type is primarily due to sudden coronary artery spasm, though atherosclerosis may also be a component. The third, most severe type is called unstable angina. It occurs with no predictability and can quickly lead to a heart attack. Anyone with significant, new chest pain or a worsening of previously mild angina must seek medical care immediately.

**Lifestyle changes that may be helpful:** Cigarette smoking causes damage to the coronary arteries and, in this way, can contribute to angina. Stopping smoking is critical for anyone with angina who smokes. Smoking has also been
shown to reduce the effectiveness of treatment of angina.1 Secondhand smoke should be avoided as well.2

Increasing physical exercise has been clearly demonstrated to reduce symptoms of angina as well as to relieve the underlying causes. One study found that intense exercise daily for ten minutes was as effective as beta-blocker drugs in one group of patients with angina.3 Anyone with a heart condition including angina or anyone over the age of forty should consult a doctor before beginning an exercise plan.

**Dietary changes that may be helpful:** Coffee should probably be avoided. Drinking five cups or more a day has been shown to increase the risk of angina, although specifics about the relationship between different forms of coffee and angina remain unclear.4 (See also the section on atherosclerosis.)

**Nutritional supplements that may be helpful:** Carnitine is an amino acid important for transporting fats that can be turned into energy in the heart. Several studies using 1 gram of carnitine two to three times per day show improvement in heart function and reduced symptoms in patients with angina.5 6 7 Coenzyme Q10 also contributes to the energy-making mechanisms of the heart. Angina patients given 150 mg of coenzyme Q10 each day have experienced greater ability to exercise without problems.8 This has been confirmed in independent investigations.9

Low levels of antioxidant vitamins in the blood, particularly vitamin E, are associated with greater rates of
angina. This is true even when smoking and other risk factors for angina are taken into account. Early, short-term studies using 300 IU per day of vitamin E could not find a beneficial action on angina. A later study supplementing small doses of vitamin E (50 IU per day) for longer periods of time showed a minor benefit in people suffering angina. Those affected by variant angina have been found to have the greatest deficiency of vitamin E compared with other angina patients.

Fish oil, which contains the beneficial fatty acids known as EPA and DHA, has been studied in the treatment of angina. In some studies, 3 grams or more of fish oil three times per day (providing a total of about 3 grams of EPA and 2 grams of DHA) have reduced chest pain as well as the need for nitroglycerin, a common medication used to treat angina; other investigators could not confirm these findings. If fish oil is supplemented, vitamin E should be taken with it, as vitamin E may protect the fragile oil against free radical damage.

Magnesium deficiency may be responsible for spasms that occur in coronary arteries, particularly in variant angina. While studies have used injected magnesium to stop such attacks effectively, it is unclear if oral magnesium would be effective.

Nitroglycerin and similar drugs cause dilation of arteries by interacting with nitric oxide, a potent stimulus for dilation. Nitric oxide is made from arginine, a common amino acid. Blood cells in people with angina are known to make
insufficient nitric oxide, which may in part be due to abnormalities of arginine metabolism. Taking 2 grams of arginine three times per day for as little as three days has improved the ability of angina sufferers to exercise. Detailed studies have investigated the mechanism of arginine and have proven that it operates by stimulating blood vessel dilation.

Bromelain is a natural blood thinner because it prevents excessive blood platelet stickiness. This may explain, in part, the positive reports in a few clinical trials of bromelain to decrease thrombophlebitis (inflammation of veins) and pain from angina and thrombophlebitis.

**Are there any side effects or interactions?** Refer to the individual supplement for information about any side effects or interactions.

**Herbs that may be helpful:** The fruits, leaves, and flowers of the hawthorn tree contain anthocyanidins, which protect blood vessels from damage. A 60 mg hawthorn extract containing 18.75% proanthocyanidins taken three times per day improved heart function and exercise tolerance in angina patients.

Kudzu is used in modern Chinese medicine as a treatment for angina.

**Are there any side effects or interactions?** Refer to the individual herb for information about any side effects or interactions.
References:


