



## Preventing a Second Heart Attack or Stroke

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By Dr. Michael Murray, N.D

People who have experienced a heart attack or stroke and live through it are extremely likely to experience another. The primary prevention of subsequent cardiovascular events is to control the major cardiac risk factors (e.g., elevated cholesterol, high blood pressure, cigarette smoking, diabetes, and physical inactivity). The most popular "secondary" recommendation to reduce the risk of a subsequent heart attack being given by most physicians is low-dose aspirin (e.g., 325 mg per day). However, this article will ask the question "is this the best recommendation to make to survivors of heart attacks?"

### Aspirin as prevention

There have been seven prospective, randomized, placebo-controlled trials involving almost 15,000 survivors of heart attacks which have examined the use of aspirin to reduce the incidence of recurrent heart attack and death. These trials have used several doses of aspirin ranging from 325 mg to 1,500 mg daily and enrolled patients at various intervals after infarction, ranging from four weeks to five years. Not a single study demonstrated a statistically significant reduction in mortality with aspirin use.

So, if no single study demonstrated a benefit, how did aspirin become the "drug of choice" for these patients? When all the results from these studies were pooled, aspirin was shown to produce a reduction in mortality rate from all causes and cardiovascular deaths. The mortality rate for all causes in the aspirin group was 5.8 percent compared to 8.3 percent in the placebo group, indicating a reduction in mortality by 30 percent with aspirin.

Although it is becoming popular to recommend dosages of aspirin lower than 325 mg (e.g., 50 mg to 150 mg daily), these lower dosages have not been tested in properly designed trials.

### The safety of aspirin

Aspirin and other non-steroidal anti-inflammatory drugs (NSAIDs) are

associated with a significant risk of peptic ulcer. However, most studies documenting the relative frequency of peptic ulcers as a consequence of aspirin and NSAIDs have focused on their use in the treatment of arthritis and headaches. Recently, the risk of gastrointestinal bleeding due to peptic ulcers was evaluated for aspirin at daily dosages of 300 mg, 150 mg, and 75 mg.

The study, conducted at five test hospitals in England, concluded that there was an increased risk of gastrointestinal bleeding due to peptic ulcer at all dosage levels. However, the dosage of 75 mg per day was associated with a 40 percent reduction, compared to 300 mg per day and 30 percent for 150 mg per day. The researchers concluded, "No conventionally used prophylactic aspirin regimen seems free of the risk of peptic ulcer complications."

Given the fact that it is not known whether 75 mg of aspirin per day is at all helpful in preventing a second heart attack, most physicians recommend at least 300 mg. In the prevention of stroke, the dosage necessary appears to be 900 mg. These dosage recommendations carry with them a significant risk for developing a peptic ulcer, but in high-risk patients unwilling to adopt the natural approach, I would certainly recommend aspirin therapy as the second choice.

### Alternatives to aspirin

The first alternative to aspirin is one too often overlooked by many physicians—diet. As of September 1995, three studies have shown that dietary modifications are more effective in preventing heart attack recurrence than aspirin. The results of these studies clearly illustrate that diet and lifestyle are not only protective against heart disease, but also can dramatically reverse the blockage of clogged arteries.

The most famous of the three studies showing this effect is the Lifestyle Heart Trial conducted by Dr. Dean Ornish. In

this study, subjects with heart disease were divided into a control group and an experimental group. The control group received regular medical care while the experimental group was asked to eat a low-fat vegetarian diet for at least one year. The diet included fruits, vegetables, grains, legumes, and soybean products. Subjects were allowed to consume as many calories as they wished. No animal products were allowed except egg white and one cup per day of nonfat milk or yogurt. The diet contained approximately 10 percent fat, 15 to 20 percent protein, and 70 to 75 percent carbohydrate which was predominantly complex carbohydrate from whole grains, legumes, and vegetables.

The experimental group was also asked to perform stress reduction techniques such as breathing exercises, stretching exercises, meditation, imagery, and other relaxation techniques for an hour each day and to exercise at least three hours a week. At the end of the year, the subjects in the experimental group showed significant

overall regression of atherosclerosis of the coronary blood vessels. In contrast, subjects in the control group who were being treated with regular medical care and following the standard American Heart Association diet actually showed progression of their disease. In other words, the control group actually got worse.

Ornish states, "This finding suggests that conventional recommendations for patients with coronary heart disease (such as a 30 percent fat diet) are not sufficient to bring about regression in many patients."

The other two studies showing that diet can prevent further heart attacks in patients



suffering a first heart attack highlight the importance of omega-3 fatty acids and again show the ineffectiveness of the American Heart Association's dietary recommendations.

Numerous population studies have demonstrated that people who consume a diet rich in omega-3 oils from either fish or vegetable sources have a significantly reduced risk of developing heart disease. Furthermore, results from autopsy studies have shown that the highest degree of coronary artery disease is found in individuals with the lowest concentration of omega-3 oils in their fat tissues. Conversely, individuals with the lowest degree of coronary artery disease had the highest concentration of omega-3 oils.

In the Dietary and Reinfarction Trial (DART), only when the intake of omega-3 fatty acids (from fish) was increased were future heart attacks reduced. The other study, the Lyon Diet Heart Study, determined that increasing the intake of omega-3 fatty acids from plant sources (alpha-linolenic acid) offers the same degree of protection as increased fish intake. The diet used in the Lyon Heart Study is often referred to as the Mediterranean or Cretan Diet. Compared to the standard American diet (the SAD), the Cretan diet consists of more bread, more root vegetables, more green vegetables, more fish, less meat (beef, lamb, and pork are replaced with poultry), no day without fruit, and butter and cream replaced with canola and olive oil. Compared to the control group, the group consuming the Cretan diet had a 60 percent reduction in overall mortality.

**Here are four recommendations to achieve better health and more optimal levels of the omega-3 fatty acids in body tissues.**

1. Reduce the intake of saturated fat by decreasing the intake of animal foods.

2. Eliminate the intake of trans-fatty acids by avoiding margarine, shortening, and most processed foods.
3. Increase the consumption of cold water fish like salmon, mackerel, herring, and halibut.
4. Take one tablespoon of flaxseed oil daily.

**There are two additional measures that I recommend to anyone who has had a previous heart attack or is at high risk for a heart attack:**

1. Take a high quality garlic preparation.
2. Take aortic glycosaminoglycans.

#### **Garlic**

Garlic exerts many beneficial effects against atherosclerosis. Most people are aware of garlic's ability to lower cholesterol and blood pressure. In addition, garlic inhibits platelet aggregation and promotes the breakdown and formation of fibrin (a clotting protein implicated in heart disease and strokes). The majority of studies showing a positive effect of garlic and garlic preparations are those which deliver a sufficient dosage of allicin. Since allicin is the component in garlic that is responsible for its easily identifiable odor, some manufacturers have developed highly sophisticated methods in an effort to provide the full benefits of garlic-they provide "odorless" garlic products concentrated for alliin, because alliin is relatively "odorless" until it is converted to allicin in the body. Products concentrated for alliin and other sulfur components provide all of the benefits of fresh garlic but are more "socially acceptable."

Based on a great deal of clinical research, the dosage of a commercial garlic product should provide a daily dose of at least 10 mg alliin or a total allicin potential of 4,000 mcg. The German Kommission E recommends the equivalent of 4,000 mg of fresh garlic, roughly one to four cloves.

#### **Aortic glycosaminoglycans**

In addition to diet and garlic supplementation, a mixture of highly purified glycosaminoglycans derived from beef, that are also naturally present in the human aorta (the largest artery in the body) are recommended. For more information on aortic GAGS, refer to the back page.

These have been shown to inhibit platelet aggregation as well as protect and promote normal artery and vein function. Over 50 clinical studies have shown an

orally administered complex of aortic GAGs to be effective in a number of vascular disorders, including cerebral and peripheral arterial insufficiency; venous insufficiency and varicose veins; hemorrhoids; vascular retinopathies including macular degeneration; and post-surgical edema. Significant improvements in both symptoms and blood flow have been noted.

I recommend aortic GAGS primarily to patients recovering from heart attack or stroke, and those who have had either angiograms, coronary artery bypass surgery, or angioplasty. The dosage of aortic GAGS is 100 mg daily. Similar, but not nearly as impressive, results to aorta extracts in the treatment of atherosclerosis have been noted with chondroitin sulfate at a daily dose of 3 grams (1 gram with meals, three times daily).

#### **Better alternatives**

The best approach to preventing subsequent heart attacks may not be low-dose aspirin, especially in aspirin sensitive patients. Three dietary studies have demonstrated greater protection. Particularly important in protecting against a recurrent heart attack are omega-3 fatty acids. The amount of omega-3 fatty acids in the diet can be increased by eating more cold-water fish and supplementing the diet with flaxseed oil. Garlic and aortic GAGS may also prove to be a more effective recommendation in preventing a recurrent heart attack than aspirin. Like aspirin, garlic and aortic GAGS inhibit platelet aggregation. However, they also exert many other beneficial effects on the cardiovascular system.

What about preventing a subsequent stroke? To prevent another stroke, as well as to promote recovery from a stroke, I would recommend adding Ginkgo biloba extract (80 mg three times daily) to the program given for preventing a subsequent heart attack. Ginkgo biloba extract, standardized to contain 24 percent ginkgo flavonoglycosides and six percent terpenoids, has been the subject of over 300 published scientific papers and over 40 double-blind studies in the treatment of decreased blood supply to the brain (cerebral vascular insufficiency). It is currently the third most widely prescribed drug of all kinds in Germany. Ginkgo biloba extract has demonstrated remarkable effects in improving many symptoms associated with aging, including short-term memory loss, depression, dizziness, ringing in the ears, and headache. Ginkgo biloba extract has also been shown to enhance stroke recovery.



The aorta is the main artery of the body. It arises directly from the heart to supply oxygenated blood to all other arteries of the body. The mucopolysaccharides or glycosaminoglycans (GAGS) of the aorta are the ground substance components responsible for providing structural support. Consistent with the theory behind modern glandular therapy, i.e., like cures like, the use of extracts rich in aortic glycosaminoglycans may be beneficial in the treatment of atherosclerosis.

Considerable evidence supports the clinical effectiveness of aortic GAGS in improving arterial function and blood flow. In addition, there is evidence indicating aortic GAGS address many of the underlying features which contribute to the development of atherosclerosis. Most clinical studies have utilized a mixture of highly purified bovine-derived glycosaminoglycans naturally present in the aorta, including dermatan sulfate, heparan sulfate, hyaluronic acid, chondroitin sulfate, and related hexosaminoglycans.

#### **Disorders of the arteries**

Aortic GAGS are essential for maintaining the health of arteries. In addition, aortic GAGS have many important effects which interfere with the progression of atherosclerosis. These include preventing damage to the surface of the artery, formation of damaging blood clots, migration of smooth muscle cells into the intima, and formation of fat and cholesterol deposits, as well as lowering total cholesterol levels while raising HDL-cholesterol.

Studies in animals have indicated that aortic GAGS are effectively absorbed orally and are incorporated into vessels where they dramatically improve the integrity and function of arteries.

As for human use, a number of clinical studies have demonstrated that supplementing the diet with aortic GAGS has a remarkable effect in improving the structure, function, and integrity of arteries as well as improving blood flow. Aortic GAGS have been shown to be effective in improving both cerebral (brain) and peripheral (hands and feet) vascular insufficiency. Significant improvements in both symptoms and blood flow have been noted.

Symptoms of cerebral vascular insufficiency can include: short-term memory loss, vertigo, headache, ringing in the ears, and depression. These symptoms are often referred to as "symptoms of aging" and represent almost entirely a reduced supply of blood and oxygen to the brain due to atherosclerosis. Symptoms of peripheral

vascular disease can include: coldness of hands or feet, pain, muscle cramps, and impotence.

#### **Disorders of veins**

Veins are fairly frail structures. Defects in the wall of a vein lead to dilation of the vein and damage to the valves. When the valves become damaged, the increased pressure results in the bulging veins known as varicose veins.

Varicose veins affect nearly 50 percent of middle-aged adults. The veins just under the skin of the legs are the veins most commonly affected due to the tremendous strain that standing has on these veins. When an individual stands for long periods of time, the pressure exerted against the vein can increase up to ten times. Hence, individuals with occupations that require long periods of standing are at greatest risk for developing varicose veins.

Women are affected about four times as frequently as men; obese individuals have a much greater risk; and the risk increases with age due to loss of tissue tone, loss of muscle mass, and weakening of the walls of the veins. Pregnancy may also lead to the development of varicose veins, as pregnancy increases venous pressure in the legs.

Several theories exist to explain the cause of varicose veins: genetic weakness of the veins or venous valves; excessive venous pressure due to a low-fiber diet induced increase in straining during defecation; long periods of standing and/or heavy lifting; damage to the veins or venous valves secondary to thrombophlebitis; and weakness of the vascular walls due to either abnormalities in the proteoglycans of the connective tissue or excessive release of cellular enzymes which break down the ground substance, resulting in increased capillary permeability and loss of integrity of the venous structure.

GAGS provide the skeletal framework of the vein and are therefore essential in maintaining the structure and integrity of veins. Without proper structural support, veins will lose their shape and become bulging and unsightly.

Aortic GAGS have demonstrated impressive clinical results in improving the function and structure of veins. Individuals with poor venous function of the legs typically experience such symptoms as a sense of heaviness in the legs, tingling sensations, fluid retention, itching, and painful cramps. These symptoms are improved with aortic GAGS because of their ability to improve the structure and function of the vein, thereby allowing improved blood flow.

On a final note, a couple of double-blind studies have compared aortic GAGS (72 mg/day) to flavonoid extracts, hydroxyethyl-rutosides (1,000 mg/day) and bilberry extract (320 mg/day), respectively, in the treatment of hemorrhoids and varicose veins. The aortic extract produced far better results. In fact, in the study of hemorrhoids, the authors suggested that it should be used as the "drug of first choice" in the non-surgical treatment of acute hemorrhoidal pain and disease.

#### **Dosage**

The dosage of the mixture of highly purified bovine derived glycosaminoglycans naturally present in the aorta (including dermatan sulfate, heparan sulfate, hyaluronic acid, chondroitin sulfate, and related hexosaminoglycans) is 100 mg daily. Similar, but not nearly as impressive, results to aorta extracts in the treatment of atherosclerosis have been noted with chondroitin sulfate at a daily dose of 3 grams (1 gram with meals, three times daily).

*Editor's note: For more information on natural approaches to cardiovascular disease, please consult Dr. Murray's latest book, Heart Disease and High Blood Pressure. It is part of the Getting Well Naturally Series and is available at your local health food store or through IMPAKT Communications 1-800-477-2995 (U.S.) or 1-888-2922229 (Canada).*