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UPDATE

New Therapies For Heart Disease And Stroke

BLOOD CLOTS THAT FORM INSIDE ARTERIES ARE THE LEADING CAUSE OF DEATH IN THE WESTERN WORLD.

Most heart attacks and strokes are caused by a blood clot that obstructs the flow of blood to a portion of the heart or brain. When blood flow is interrupted, cells are deprived of oxygen and die.

Blood clots kill more than 600,000 Americans every year, yet conventional medicine has largely ignored well-documented methods of reducing abnormal blood clot formation.

Low-dose aspirin and certain nutrients provide partial protection against abnormal blood clots, but a newly identified clotting factor mandates that additional measures be taken to prevent heart attacks and strokes.

For those suffering from degeneration of the heart muscle, new therapies have been shown to restore cellular energy levels and improve cardiac output.

THE LETHAL CLOTTING FACTOR

Fibrinogen is a component of blood involved in the clotting process. High levels of fibrinogen predispose a person to coronary and cerebral artery disease, even when other known risk factors such as cholesterol are normal.

Cigarette smoking increases cardiovascular disease risk. Cigarette smoking also raises fibrinogen levels in the blood. Studies documenting the dangers of cigarette smoking show that smokers who suffer from cardiovascular disease also have high fibrinogen levels. Fibrinogen elevation in cigarette smokers has been identified as a primary cause of heart disease and stroke. In fact, high fibrinogen levels may be a more powerful predictor of cardiovascular mortality than cigarette smoking itself.

The role of fibrinogen in cardiovascular disease has been confirmed by the results of all relevant studies conducted in the past 10 years. High fibrinogen levels are at least as great a predictor of cardiovascular disease as any other known risk factor such as elevated LDL cholesterol, elevated triglycerides, high blood pressure, obesity, and diabetes.

Fibrinogen levels are high in persons with a family history of heart disease. The predisposition to high fibrinogen levels is genetically inherited, which suggests that fibrinogen may be the genetic factor that causes familial heart disease.

Exposure to cold increases fibrinogen levels by 23%. As a result, mortality from heart attack and stroke is higher in winter than in summer.

HOW FIBRINOGEN KILLS

Fibrinogen hinders blood flow and oxygen delivery by causing platelet aggregation. Increased blood thickness leads to diminished circulation.

Fibrinogen binds blood platelets together, thus initiating abnormal arterial blood clot formation. Fibrinogen is then converted to fibrin, which is the final step in the blood clotting process.

Fibrin serves as a scaffold for LDL cholesterol in the formation of the atherosclerotic plaque that slowly blocks arteries. Fibrinogen and LDL cholesterol work together to help generate atherosclerotic plaques after fibrinogen initiates the process.

Most heart attacks occur because a blood clot forms inside a coronary artery, which chokes off the blood supply to the heart. Most strokes occur because a blood clot forms inside a cerebral artery, which chokes off the blood supply to the brain. It is, therefore, crucial to take steps to reduce the risk of fibrinogen causing an abnormal arterial blood clot.

AGENTS THAT LOWERS FIBRINOGEN LEVELS

Platelet aggregation inhibitors reduce the risk that fibrinogen will cause an abnormal blood clot. Platelet aggregation inhibitors include aspirin, green tea, ginkgo, and vitamin E. However, for optimal protection against arterial blood clots, it makes sense to take agents that lower elevated fibrinogen levels directly.

High serum vitamin A and beta-carotene levels have been associated with reduced fibrinogen levels in humans. Animals fed a vitamin A deficient diet have an impaired ability to break down fibrinogen. When animals are injected with vitamin A they produce tissue plasminogen activator (tPA), which converts plasminogen to plasmin to break down fibrinogen.

Both fish and olive oil have been shown to lower fibrinogen in humans with elevated fibrinogen levels. The daily amount of fish oil required to produce a fibrinogen-lowering effect in one published study was 6 grams, which is equal to about five capsules of MEGA EPA fish oil concentrate capsules.

Elevated homocysteine levels have been shown to block the natural breakdown of fibrinogen by inhibiting the production of tissue plasminogen activator. Folic acid and vitamin B6 reduce elevated homocysteine levels.

THE ANTI-FIBRINOGEN ACTION OF VITAMIN C

One of the more interesting studies involves the use of vitamin C to break down excess fibrinogen. The FDA has stated that Americans only need 60 to 100 mg. of vitamin C a day, and a new government report suggests that Americans need only 200 mg. of vitamin C per day. The new report spurred widespread media ridicule about the use of vitamin C supplements in excess of 200 mg. a day.

In a report in the journal *Atherosclerosis*, heart disease patients were given either 1,000 mg. or 2,000 mg. a day of vitamin C to determine its effect on the breakdown of fibrinogen. At 1,000 mg. a day, there was no detectable change in fibrinolytic activity or cholesterol, but at 2000 mg. a day of vitamin C, there was a 27% decrease in the platelet aggregation index, a 12% reduction in total cholesterol, and a 45% increase in fibrinolytic (fibrinogen breakdown) activity!

Again, the U.S. government and the medical establishment are trying to defraud Americans into believing that they do not need vitamin supplements! In this case, Americans who choose to believe their government have an increased risk of dying of heart attacks and strokes.

OTHER WAYS OF LOWERING FIBRINOGEN

Some non-pharmacologic ways of lowering fibrinogen include:

- Stopping smoking
- Avoiding obesity
- Lowering LDL cholesterol
- Avoiding exposure to cold

FDA-APPROVED DRUGS DON'T WORK

Don't depend on FDA-approved drugs to lower your fibrinogen levels. The popular cholesterol-lowering drug Lipid (gemfibrozil) increases fibrinogen levels by 9% to 21%! Other FDA-approved heart medications have shown little effect on fibrinogen levels.

EUROPEAN DRUG

A European drug called Bezafibrate has been shown to lower fibrinogen levels by 25% in patients with fibrinogen levels between 300 and 415 mg./dl. In patients whose fibrinogen levels were over 600, Bezafibrate lowered fibrinogen levels by 45%.

Bezafibrate has been used widely in Europe since 1978 to lower LDL cholesterol by 20-30% and increase beneficial HDL cholesterol. It has over 9 million patient years of safety documentation. The fact that Bezafibrate is still not approved by the FDA for use by Americans is inexcusable.

The best approach to preventing heart attacks and strokes may be the use of natural herbal therapies, which have been shown to:

1. Lower cholesterol levels
2. Lower fibrinogen levels
3. Inhibit abnormal platelet aggregation

4. Boost cardiac cell energy levels.

HERBS INSTEAD OF DRUGS TO PREVENT AND TREAT CARDIOVASCULAR DISEASE

A variety of herbs, herbal extracts, and plant enzymes have shown powerful therapeutic benefits in the prevention and treatment of cardiovascular diseases. These agents have specific mechanisms of action that go beyond standard nutrients and drugs. Here is a rundown of the most potent of these agents.

Bromelain

Bromelain is a mixture of sulfur-containing proteolytic enzymes obtained from the pineapple plant. Bromelain breaks down fibrinogen and has been shown to be useful in treating cardiovascular disease.

Dr. Hans Nieper is a German medical doctor who has successfully used bromelain as a fibrinolytic agent for decades. Dr. Nieper has used high doses of bromelain, magnesium, and potassium in cardiovascular patients with great success. However, the FDA considers him an international criminal and has banned the importation of all "Nieper products" into the United States .

In the *Journal of the International Association for Preventive Medicine* (6:139-51 1979), Dr. Nieper reported that his trials with bromelain produced inhibition of platelet aggregation, reduction of angina symptoms, relaxation of the arterial constriction and promoted the breakdown of fibrinogen.

In the German journal *Acta Medica Empirica* (5:274-5 1978), Dr. Nieper reported that 14 patients with angina given 1,000-1,400 mg. a day of bromelain reported disappearance of all symptoms within 4-90 days, depending on the severity of the coronary occlusions.

In another study, angina patients who failed to improve on all conventional therapies showed a 36% reduction in fibrinogen levels after three months of bromelain therapy. Daily angina attacks were reduced by 73%, daily nitrate consumption was reduced 78%, working capacity increased 28%, and blood circulation was improved 80%.

In *Medical Hypothesis* (6[11]: 1123 1980), two large-scale studies on heart disease patients showed that bromelain broke down fibrinogen, inhibited platelet aggregation, and was shown to be almost completely effective in treating coronary thrombosis (heart attack).

Earlier Japanese studies showed that just two tablets of bromelain reduced platelet aggregability within two hours in 8 of 9 patients with hyper platelet aggregation. Another study showed that bromelain broke down rabbit aortic atherosclerotic plaque in vitro and in vivo.

Bromelain inhibits Platelet Activating Factor (PAF) in a manner similar to green tea.

Cardiovascular disease patients should test their fibrinogen levels to see if bromelain can lower their serum fibrinogen to a safe level. A pharmaceutical dose of bromelain is included in our new preventive Herbal Cardiovascular Formula, which you will be reading about later in the article.

Curcumin

Curcumin is the yellow pigment of the spice called turmeric. When rats were fed small doses of curcumin, their cholesterol levels fell to one-half of those in rats not receiving curcumin. (*Journal of Nutrition* 100: 1307-16 1970)

Curcumin reduces cholesterol by interfering with intestinal cholesterol uptake, increasing the conversion of cholesterol into bile acids, and increasing the excretion of bile acids. (*International Journal of Vitamin Nutritional Research* 61:364-9 1991)

Curcumin prevents abnormal blood clot formation by interfering with the formation of thromboxanes, the promoters of platelet aggregation. Curcumin increases levels of prostacyclin, the body's natural inhibitor of abnormal platelet aggregation. (*Arzneim Forsh* 36:715-7 1986)

When 500 mg. a day of curcumin was given to ten volunteers, there was a 29% increase in beneficial HDL cholesterol after only 7 days. Total cholesterol was reduced by 11.6% and lipid peroxidation was by 33%. (*Indian Journal of Physiology* 36(4):273-275 1992)

Other Benefits of Curcumin

While FDA-approved cholesterol-lowering drugs can cause liver damage, curcumin's ability to help prevent cancer and inhibit dangerous viruses is well documented. Curcumin also has anti-inflammatory effects.

Curcumin neutralizes dietary carcinogens and has been shown to inhibit cancer at the initiation, promotion, and progression stages of development.

Curcumin is a potent antioxidant and has been shown to be an inhibitor of HIV replication via several different mechanisms.

Unlike FDA-approved drugs, curcumin may protect against liver damage caused by viral hepatitis.

Caution: Do not use curcumin if you have a biliary tract obstruction because curcumin increases the excretion of cholesterol-bile acids through the bile duct. High doses of curcumin on an empty stomach may cause stomach ulcers.

Curcumin is included in our new Herbal Cardiovascular Formula. A small amount of curcumin was added to our Life Extension Booster formula several months ago.

Gugulipid

Gugulipid is an extract from the mukjil tree. Gugulipid extract produces a blood-fat-lowering effect with no side effects.

In a study in the *Journal of Associated Physicians-India* (37(5):323-8 1989), 125 patients who received Gugulipid experienced an 11% decrease in total cholesterol and a 16.8% decrease in triglyceride levels within 3-4 weeks. Patients with elevated cholesterol responded better than patients with normal cholesterol. HDL cholesterol increased in 60% of the patients receiving gugulipid.

In a placebo-controlled study, 205 patients received gugulipid (25 mg. three times a day). Of the gugulipid-treated patients, 70%-80% showed cholesterol reduction compared to virtually none in the placebo group. (*Journal of Associated Physicians-India* 37 (5):328-8 1989)

In another placebo controlled trial in 40 patients with high blood fat levels, serum cholesterol declined by 21.75% and triglycerides by 27.1% after three weeks of administration. After 16 weeks, HDL cholesterol increased by 35.8%. The placebo group did not achieve statistically significant results. (*Indian Journal of Medical Research* 87:356-60 1988)

Ginger

Thromboxane is a byproduct of the body's utilization of certain types of lipids. It initiates clot formation.

Ginger is a potent inhibitor of thromboxane synthesis, just like aspirin is. Unlike aspirin, however, ginger also raises prostacyclin, which inhibits abnormal platelet aggregation. Thus, ginger inhibits abnormal platelet aggregation by at least two mechanisms of action. (*Medical Hypothesis* 20:271 1986)

In a study in *Prostaglandins Medicine* (13:277 1984), ginger inhibited platelet aggregation in vitro more effectively than onion or garlic.

In the *New England Journal of Medicine* (303:756-7 1980), it was reported that ginger completely inhibited arachidonate-induced platelet aggregation in platelet rich plasma that had been incubated for 1 to 60 minutes. Ethanol showed no effect.

Ginger also increases the contractile strength of the heart. Scientists call ginger a "cardiotonic agent" because of its ability to increase ATP energy production in the heart and to enhance calcium pumping within heart cells that is required for optimal cardiac output.

New Herbal Cardiovascular Formula

The herbs that best protect the cardiovascular system have been combined into our new Herbal Cardiovascular Formula that provides the ideal potency of each herbal extract at a far lower price than one would pay if purchasing these herbs separately.

Each capsule of Herbal Cardiovascular Formula contains:

Curcumin (97% purity) 250 mg.

Bromelain (2000 gdu per gram) 250 mg.

Ginger (gingerol standardized) 500 mg.

Gugulipid 35 mg.

If you're taking Herbal Cardiovascular Formula to help prevent cardiovascular disease, take one capsule in the morning and one in the evening. Cardiovascular patients should test their cholesterol and fibrinogen levels within 45 days of starting on this therapy to make sure that Herbal Cardiovascular Formula is providing them with adequate cholesterol and fibrinogen lowering effects. If not, higher doses of Herbal Cardiovascular Formula should be taken.

While blood testing is not mandatory for healthy people seeking to reduce their risk of heart attack and stroke, we think that everyone who takes supplemental nutrients and herbs for health and longevity should undergo an annual battery of blood tests (under the care of a physician) to fine tune and optimize their life extension program.

You may be able to substitute our new Herbal Cardiovascular Formula for cholesterol-lowering drugs such as:

Mevacor, Lopid, Zocor, Pravachol, Lescol, Questran, Atromid, Lorelco

Only blood tests can document whether Herbal Cardiovascular Formula is an effective substitute for these cholesterol-lowering drugs.

A one-month supply (60 capsules) of Herbal Cardiovascular Formula retails for \$30.00. Compare this price to FDA-approved drugs that cause adverse side effects, and do not produce side-benefits such as antioxidant action, antiviral action, and cancer risk reduction.

With the new laws protecting dietary supplements against FDA interference, the consumer can now compare FDA-approved drugs with less costly and safer natural therapies. In the case of cholesterol and fibrinogen reduction, the relative effects of FDA-approved drugs and herbal therapies are easy to measure with regular blood tests.

Forskolin

Boosts Cardiac Energy and Lowers Blood Pressure

Between 1981 and 1994, an herbal extract called forskolin was tested in over 5,000 in vitro studies to assess its cell regulating effects. Forskolin showed a wide range of health benefits, but we will only discuss its cardiovascular effects in this article.

Forskolin appears to be effective in lowering blood pressure, improving arterial blood flow, strengthening heart muscle contraction, and relieving angina (heart) pain.

In a human study involving seven patients with dilated cardiomyopathy, forskolin was shown to improve left ventricular function, (*Arzneim Forsh* 37:364-7). This confirmed earlier animal studies showing that forskolin increases the contractile force of the heart muscle.

In the *Journal of Cardiovascular Pharmacology* (16/1 1990), forskolin's multiple cardiovascular actions were investigated in cardiomyopathy patients. Forskolin was shown to reduce systolic and diastolic blood pressure and pulmonary artery pressure with a concomitant increase in cardiac output. Cardiac stroke volume and stroke volume index was increased by 70%. The authors of the study concluded that forskolin could be used for the treatment of severe heart failure.

How Forskolin Works

Studies show that forskolin works by producing a potent arterial muscle relaxing effect. High blood pressure is often caused by a reduction in arterial elasticity. The vasodilating effects of forskolin are thought to be the mechanism responsible for its blood pressure lowering effects.

Forskolin's energy-enhancing effects are due to its unique ability to stimulate adenylate cyclase activity and elevate cyclic adenosine monophosphate (cAMP) levels. cAMP regulates and activates critical enzymes required for cellular energy.

Forskolin can be used safely by healthy people and can be taken by those with heart disease to improve cardiovascular health.

Physician Cooperation Essential

If you want to use forskolin to replace antihypertensive drugs, extreme caution is mandatory any physician cooperation is essential. You should reduce to dosage of your anti-hypertensive drug slowly, while increasing your intake of forskolin and monitoring your

blood pressure on a daily basis. If you do not exercise caution, an acute hypertensive event could occur, possibly leading to a stroke.

If you want to use forskolin to replace drugs that strengthen heart muscle contraction, extreme caution is also mandatory and physician cooperation essential. Numerous tests should be conducted to make sure forskolin is helping to maintain adequate cardiac output.

How To Obtain Forskolin

Forskolin comes in capsules containing 10 mg. of elemental forskolin extracted from the *Coleus forskohlii* herb. One capsule a day is suggested for the first two weeks. One additional capsule can be added every two weeks. Up to six capsules a day can be used.

SOY EXTRACT TO LOWER CHOLESTEROL AND TRIGLYCERIDE LEVELS

In recent months, the Life Extension Foundation has provided persuasive evidence that phyto extracts from soy can help to prevent cancer and may even be effective in the treatment of certain cancers. The Foundation strongly recommends that members eat soy foods and/or use soy concentrate supplements to help reduce their cancer risk. Soy may prevent cancers such as prostate and breast cancer that may not be prevented by vitamin supplements.

The cholesterol-lowering effects of soy protein has been in the medical literature for 80 years. The *New England Journal of Medicine* (Aug 3, 1995) published an analysis of all the published studies on the use of soy to lower blood fat levels. The results of this analysis of 38 controlled studies showed that soy protein produced a reduction of 9.3% in total cholesterol, 10.5% in triglyceride levels, and 12.9% in dangerous artery clogging LDL cholesterol. A statistically insignificant increase in beneficial HDL of 2.4% was observed.

The percentage reductions produced by soy protein were more significant in those with moderate-to-high serum cholesterol and triglyceride levels.

How Soy Protein Lowers Cholesterol

The primary mechanism by which soy protein lowers cholesterol appears to be related to the phytoestrogen genistein and isoflavone compounds found in soy. That means Foundation members who are using FDA-approved cholesterol-lowering drugs might be able to substitute soy to lower their cholesterol/triglyceride levels.

A side-benefit of soy extract is cancer prevention, while many FDA-approved cholesterol-lowering drugs produce adverse side effects.

In addition to lowering blood fat levels, soy may protect against the development of atherosclerosis and cerebrovascular disease via other mechanisms.

Anyone contemplating using nutrients to replace drugs should have their cholesterol and triglyceride levels checked regularly (under the care of a physician) to make sure the desired blood-fat reducing effect is really occurring.

Super Soy Extract A Phytochemical Breakthrough

Super Soy Extract contains 40 mg of the phytochemical genistein and 200 mg. of total isoflavones per tablespoon. The trademarked name for this new soy extract is Ecogen, but you can order this potential cancer breakthrough under the name Super Soy Extract powder. The minimum dose for cholesterol reduction is 5 tablets a day or one full teaspoon (5 grams) of powder a day. This provides 20 mg of genistein and 100 mg of total isoflavones.

For those with elevated cholesterol levels, we suggest a dose of one-to-two full tablespoons of powder or 20-40 tablets a day. The powder is easily dispersible and has a light peanut butter taste. By taking 20 grams a day of Super Soy Extract, you obtain 80 mg of the phytoestrogen genistein and 400 mg. of soy isoflavones.

Super Soy Extract powder is available in 300 gram bottles that retail for \$49.95 each. At the minimum dose of 5 grams a day, each bottle will last 60 days.

You can still order low cost Soy Protein Concentrate powder for a retail price of only \$12.00 a pound (\$9.00 for members). The recommended dose for cholesterol reduction for this less concentrated soy product is 2-4 tablespoons a day.

To order these soy concentrate products, phone 1-800-544-4440.

The new Life Extension Herbal Mix now contains a small amount of genistein standardized soy concentrate. Life Extension Herbal Mix also contains potent herbal extract flavanoids such as ginkgo, grape-seed extract, and bilberry extract that are critical for maintaining healthy vascular function.

TESTING YOUR BLOOD

Regular blood tests can help to guarantee that your cardiovascular risk factors remain low.

You can ask your doctor for a fibrinogen test next time you have your blood tested. It is at least as important as a cholesterol test.

Normal fibrinogen levels are 200-400 milligrams per deciliter. Since it is also "normal" to develop cardiovascular disease, your fibrinogen level should be under 300.

If your fibrinogen level is significantly over 300, then steps should be taken to lower it.

If you are a cardiovascular disease patient, then fibrinogen testing becomes mandatory and aggressive steps must be followed if your fibrinogen levels are elevated. Cardiovascular patients often have fibrinogen levels far in excess of 400.

Total cholesterol levels should be below 200 if possible. More important is to keep LDL cholesterol below 120 and beneficial HDL cholesterol above 50.

Serum iron, glucose, and triglyceride levels should all be below 100 for optimal cardiovascular health.

OVERVIEW

The incidence of cardiovascular disease has declined in the United States for the last 28 years, yet it still remains the leading cause of death and disability.

The major reason for the reduced number of heart attacks and strokes in the U.S. are lifestyle changes on the part of the American public and the prescribing of some of these preventive measures by cardiologists.

The use of aspirin as a clot-inhibiting drug has been partially credited with the decline of cardiovascular disease, according to the *New England Journal of Medicine* (April 4, 1996). Low-dose aspirin has been shown to reduce the risk of heart attack by about 44%. The Life Extension Foundation has advocated the use of low-dose aspirin to prevent heart attack and thrombotic stroke since 1983.

THE ROLE OF VITAMIN SUPPLEMENTATION

One overlooked factor that may be responsible for the drop in cardiovascular disease in the U.S. is the skyrocketing intake of vitamin supplements that has occurred over the last 28 years.

Controlled studies consistently show a 40% reduction in heart attack risk in people who take moderate doses of vitamin E alone. Folic acid and vitamin B6 reduce artery-clogging homocysteine in the blood. Vitamin C supplementation has been shown to prolong lifespan, primarily by reducing heart attack risk.

There is now enough published information to add Herbal Cardiovascular Formula and Forskolin to our cardiovascular protocol. These new herbal supplements may enable those with cardiovascular disease to reduce or eliminate the use of FDA-approved prescription drugs in favor of nutrients that cost less and haven't adverse side effects.

The same nutrients used to treat cardiovascular disease can also be used for prevention. Most Foundation members are already following a scientific program to reduce their risk of heart attack and stroke. The new therapies discussed in this article can help to correct several cardiovascular risk factors.

What follows is the Foundation's complete cardiovascular prevention and treatment protocol. How much of this protocol you follow should be based upon your current state of cardiovascular health and how many of these nutrients you want or can afford to take.

THE FOUNDATION'S COMPLETE PROTOCOL FOR PREVENTING AND TREATING CARDIOVASCULAR DISEASE

Some specific diseases:

1. coronary artery disease
2. atherosclerosis
3. angina pectoris (heart pain)
4. cerebral vascular disease (thrombotic stroke) including transient ischemia attack
5. diabetic vascular complications

Premise: Atherosclerosis and abnormal blood clots are the leading causes of death and disability in the modern world. Atherosclerosis can cause ischemic injury (caused by lack of oxygen resulting from reduced blood flow) to any part of the body. Abnormal blood clot formation can lead to heart attacks and strokes in blood vessels which have already been narrowed by atherosclerosis.

Three specific mechanisms that have been identified as causative agents in the development of atherosclerosis and ischemia are:

1. Oxidation of LDL cholesterol and other serum lipids. Oxidation of blood fats causes them to accumulate within the linings of arteries. Oxidation of HDL cholesterol lessens its ability to remove plaque from the arterial wall.
2. Homocysteine formation in response to protein (methionine) ingestion. Homocysteine itself promotes atherosclerosis, so even if cholesterol and triglyceride levels are not elevated significantly, the formation of homocysteine can lead to atherosclerosis.
3. Abnormal platelet aggregation (clotting inside an artery). Aging and the rough edges of atherosclerotic plaque can cause a thrombus (blood clot) to form in an important artery in the heart, brain or any other organ, which causes ischemia (reduced or no blood flow), infarction (dead heart muscle), and sudden death or disability.

Suggested Nutritional Protocol

To prevent oxidation of serum cholesterol:

1. Life Extension Mix – Take the recommended amount in three divided doses every day. The recommended daily dose for Life Extension Mix tablets is 9 tablets a day. Therefore, a person should take 3 tablets of Life Extension Mix three times a day, preferably with meals. Life Extension Mix contains a wide spectrum of antioxidants that have been shown to inhibit LDL cholesterol oxidation.
2. Vitamin E – High and low doses of vitamin E have shown to inhibit LDL cholesterol oxidation and reduce the risk of heart attack. Life Extension Mix provides 500 IU of vitamin E. Another 400 to 800 IU of vitamin E in dry powder capsule form is suggested for maximum benefit.
3. Coenzyme-Q10 – CoQ10 is especially important in preventing LDL cholesterol oxidation. CoQ10 also enhances heart cell energy function. CoQ10 should be taken in doses of 100 mg. to 300 mg. daily. Capsules of CoQ10-rice-bran oil should be used based upon recent studies showing superior assimilation and cardiac benefits for CoQ10 in an absorbable oil.
4. Life Extension Herbal Mix – There are plant extracts that help to maintain the health of the vascular system and reduce the incidence of cardiovascular disease. Life Extension Herbal Mix contains herbal extracts such as green tea, ginkgo, ginseng, bilberry, and grape seed. Suggested dose of one tablespoon of this energizing drink early in the day.

To prevent the formation of atherogenic homocysteine:

1. Folic acid – Folic acid has been shown to lower serum levels of homocysteine. Folic acid only stays in the body 4-5 hours after oral ingestion, so it is crucial to take 800 mcg of folic acid with every meal in order to keep artery-clogging homocysteine at safe levels.
2. Vitamin B12 – To further reduce homocysteine levels, 2,000 mcg of sublingual vitamin B12 can be taken daily or weekly vitamin B12 shots can be obtained from your doctor.
3. Vitamin B6 – To reduce homocysteine via a different mechanism than folate (and possibly B-12). In familial homocysteinemia, folate does not reduce homocysteine levels adequately, but doses of vitamin B6 in excess of 500 mg daily can do so. Since high doses of B6 can cause peripheral nerve toxicity, high doses (500 mg a day and higher) should only be used when a blood test documents a failure of folate and vitamin B12 to lower homocysteine levels.

To prevent the formation of blood clots within arteries:

1. Aspirin – Take ¼ aspirin tablet every day with the heaviest meal of the day.
2. Fish oil – Take 8-12 capsules daily of a concentrated EPA/DHA fish oil supplement. Flax oil may work as well as fish oil.
3. Herbal Cardiovascular Formula – One capsule in the morning, one capsule in the evening.

To lower cholesterol levels:

1. Herbal Cardiovascular Formula – One capsules in the morning, one capsules in the evening.

2. Soy protein – Minimum dosage level should include 20 mg. a day of genistein.
3. Fiber – Take 10 to 30 grams of soluble fibers, which should include pectins, guar and psyllium.

It should be noted that there is an overlapping effect in the above recommendations, i.e. folic acid will reduce homocysteine levels and reduce the formation of abnormal blood clots inside arteries.

PROTOCOL FOR THE TREATMENT OF CONGESTIVE HEART FAILURE – CARDIOMYOPATHY

Specific diseases: cardiomyopathies, congestive heart failure, certain pulmonary insufficiencies

Premise: Energy deficiencies at the cellular level cause a gradual weakening of the heart muscle until a transplant becomes necessary. Some of the energy factors which have been identified may help to restore energy factors to heart cells.

Suggested Nutritional Protocol

1. Forskolin – Two to six 10 mg capsules daily
2. Acetyl-L-carnitine – 2,000 mg daily
3. Taurine – 1,500 mg a day
4. Magnesium – 1,500 mg a day

Also follow as much of the atherosclerosis protocol as possible with specific emphasis on high doses (300 mg daily) of coenzyme Q10.

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