Homocysteine Lowering Herbal Program

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Elevated homocysteine levels are an independent risk factor for heart attack, atherosclerosis and coronary artery disease, and stroke. Current research on heart disease indicates that homocysteine, not cholesterol, may be the cause of atherosclerosis. Scientific evidence exists indicating that folic acid reduces blood levels of homocysteine, and that low levels of homocysteine helps to promote heart health. Numerous experts suggest that folic acid intakes should be increased; however, adequate consumption from diet alone can be challenging. Multivitamin supplementation to augment low dietary intakes of folic acid offers a convenient way to ensure that optimal intakes of folic acid are achieved while offering an economical means to ensure optimal cardiovascular health maintenance. Homocysteine levels are significantly reduced through consumption of foods high in B vitamins.

How do you decrease your risk? Researchers at the Harvard School of Public Health found a 45% reduced risk of coronary heart disease in a study of over 80,000 nurses whose intake of folic acid was greater than 400 micrograms daily.[1] In another study, men and women over the age of 60 received either 400 mcg folic acid with 1.65 mg B6 and 3 mcg B12 or a placebo daily for 4 weeks. Individuals receiving vitamins had a significant decrease in plasma homocysteine during the first 2 weeks and a further slight decrease during the remainder of the treatment period.[2] A large multi-center European trial, published in the June 11, 1997, issue of the Journal of the American Medical Association, found that among men and women younger than age 60, the overall risk of coronary and other vascular disease was 2.2 times higher in those with plasma total homocysteine levels in the top fifth of the normal range compared with those in the bottom four-fifths. This risk was independent of other risk factors, but was notably higher in smokers and persons with high blood pressure. A Norwegian study, published in the July 24, 1997, issue of the New England Journal of Medicine, found that among 587 patients with coronary heart disease, the risk of death after four to five years was proportional to plasma total homocysteine levels. The risk rose from 3.8 percent in those with the lowest levels (below 9 µmol per liter) to 24.7 percent with the highest levels (greater than 15 µmol per liter).

Your risk is increased if you smoke, have high blood pressure or cholesterol, physical inactivity, obese and have diabetes.[1]

What to do? Eat more leafy greens. Quit smoking. Lower your cholesterol. Follow a cardio vascular protection diet to protect your blood vessels. Reduce the amount of saturated fat, cholesterol and total fat from your diet. Dietary cholesterol is only found in food of animal origin, such as meat, dairy and eggs. And though saturated fat and cholesterol often appear together, it is the amount of fat you eat, especially saturated fat that has a bigger impact on blood cholesterol levels. Avoiding foods high in saturated fat and cholesterol will help to lower your blood levels of cholesterol and you can do this by cutting back on whole milk, cheese, butter, meat fat, and poultry skin. Stay away from margarine, and foods containing trans fatty acids and partially hydrogenated oils. These foods actually raise your LDL levels and lower your HDL levels of cholesterol and interfere with essential fatty acid metabolism. Instead, use natural polyunsaturated oils like safflower, soy and flaxseed oils to meet your essential fatty acids requirements. Just 1 tablespoon per day is enough. A diet rich in fiber may actually help to lower your blood cholesterol level as well. In particular, soluble fiber appears to help bile acids, which are made up of cholesterol, pass through your system as waste, so your body absorbs less cholesterol. (When increasing your fiber intake, remember to go slowly to give your system time to adjust.) The best way to achieve these goals is to eat fewer animal products and more plant foods.

- Substitute red meats with fish and white meat; use soy based alternatives, decrease the number of eggs

per week, use egg beaters or tofu, use low fat dairy products, substitute vegetable oils for butter, lard and other saturated fats, eat fruits and vegetables daily and cut down on all refined sugar and flour products, use no or low salt, and drink herbal teas, green tea, or vegetable juices instead of soft drinks and coffee.

- Eat more cold water fish and take 1 tablespoon of flaxseed oil daily. Salmon, mackerel, herring, halibut are good sources of omega-3 fatty acids. Flaxseed oil is a good source of alpha linolenic acid, an omega-3 oil that the body can convert to eicosapentaenoic acid (EPA).
- Eat lots of raw onion, salmon, olive oil, almonds, walnuts, avocados (the latter five are all high in fat but most of it is monounsaturated fat that helps to improve cholesterol).
- Eat 5 or more servings of a combination of vegetables and fruits. Numerous studies show that a diet high in carotene rich and flavonoid rich fruits and vegetables reduces the risk of heart disease and strokes. Choose whole fruit, skin included, instead of the juice.
    - Eat green leafy vegetables, yellow-orange colored fruits and vegetables, such as carrots, apricots, mangoes, yams and squash.
    - Eat red and purple vegetables and fruits such as tomatoes, red cabbage, berries, and plums.
    - Eat beans at least three times a week. Try bean soup, cold bean salad, hummus sandwich, black bean dip. Legumes, grains and seeds are rich sources of carotenoids.
    - Good sources of flavonoids include: citrus fruits, berries, onions, parsley, legumes, green tea and red wine.
- Eat plenty of foods that contain the natural antioxidants vitamins E and C. Vitamin C rich foods include: sweet red peppers, cantaloupe, sweet green peppers, papaya, oranges, grapefruit juice, broccoli, brussels sprouts, and strawberries. Vitamin E rich foods include: sunflower seeds, walnuts, almonds, peanuts, wheat germ, soybeans, wheat germ oil, soybean oil.
- Eat a fiber rich breakfast such as oatmeal. Increase the intake of fiber and complex carbohydrates by eating 6 or more servings per day of whole grain breads, cereals, and legumes.
- Eat lots of garlic. Cooked or raw garlic both contain compounds that help lower cholesterol.
- Eat foods low in saturated fat and cholesterol, eat plenty of whole grains, fruits, vegetables, and non-fat dairy products. Specific foods known to help lower cholesterol include - soluble fiber, garlic, salmon, vitamin C and E rich foods.

SUPPLEMENTATION PROGRAM

1. **GREEN POWER:** 2-4 capsules, once or twice daily. Or, as a powder, one 4 gram scoop daily.
2. **Multi-Vitamin** as directed by manufacturer
3. **B Complex** 1 capsule once a day

GREEN POWER DRINK: Homocysteine is lowered by a diet high in green (chlorophyll-rich) vegetables which

contain naturally occuring folic acid. Regular supplementation with greens helps to decrease the risk of unprocessed homocysteine staying in the body. This formula combines chlorophyll-rich plants from the sea and land. The aquatic micro-algae, spirulina and chlorella, contain twice the chlorophyll of any land plant. They were among the first organisms on the planet, with over three and a half billion years of supporting life. In addition to chlorophyll, micro-algae contain the highest sources of protein, beta-carotene and nucleic acid of any animal or plant food. Kelp, a sea vegetable, binds heavy metals, pesticides, and such carcinogens as PCBs, and carries them safely out through the intestines. Kelp also nourishes and protects the thyroid. Wheat and barley grass can pick up as many as 90 minerals from the estimated 102 found in rich soil. It has a high nutrient content with hundreds of unique digestive enzymes not available in such concentrations in other plants. These enzymes help slow cellular deterioration and mutation and are beneficial

in degenerative diseases and in reversal of the aging process.

Multi Vitamin: Plasma homocysteine levels are strongly influenced by diet, as well as genetic factors. Homocysteine is metabolized in the human body involving the vitamins folic acid, B12 and B6 as essential cofactors and coenzymes, respectively. Supplementation with folic acid (400 micrograms), Vitamin B-6 (100 milligrams) and Vitamin-12 (100 micrograms) results in a significant reduction of the homocysteine level. Studies show that the higher the Vitamin C levels in the blood, the lower the total cholesterol and triglycerides, and the higher the HDL. Vitamin E is a blood thinner and powerful antioxidant, and it helps to protect the arteries from plaque build-up.

DIET Good sources of Vitamin B6 are beans, fish, poultry, meats, bananas, cauliflower, brown rice and broccoli. Sources of Vitamin B12 include shellfish, poultry, meat, eggs, milk, cheese and liver. Major food sources of B6 are yeast, wheat germ, legumes, potatoes, bananas and whole grain cereals. Fish is a major source for B12. Food sources of folate are green leafy vegetables, legumes, asparagus, broccoli, whole grain cereals, nuts, citrus fruits and most berries. Avoid all dairy products, animal foods, fried, processed foods, and sugars. Avoid all red meat, and remove chicken skin. Increase cold-water fish like salmon, herring, mackerel and tuna. Increase fresh vegetables, nuts, fruits, soy products, whole grains & beans. Eat seaweed to help detoxify iron and other heavy metals from the body. Drink Green Tea, some but not all observational studies suggest that green tea might help prevent heart disease.

What to Avoid: Avoid coffee. Unfiltered coffee may raise blood cholesterol levels of homocysteine, an amino acid found in our bodies. Texas Tech Medical Center's Gary Meyerrose says that elevated homocysteine may be caused by diterpenes, which are chemicals found in coffee that are known to increase cholesterol levels. If you drink alcohol, drink very moderately. Quit smoking.

Other tips:

- Increase dietary fiber
- Change to low fat diet
- Lower cholesterol levels
- Lower elevated iron levels
- Address high blood pressure
- Move your bowels daily
- Maintain correct body weight

References:

Folic Acid:

1. Rimm EB, et al. Folate and vitamin B-6 from diet and supplements in relation to risk of coronary heart disease among women. J Am Med Assn 1998;279:359-364.
2. Bronstrup A, et al. Lowering of homocysteine concentrations in elderly men and women. Int J Vitam Nutr Res 1999;69(3):187-183.