

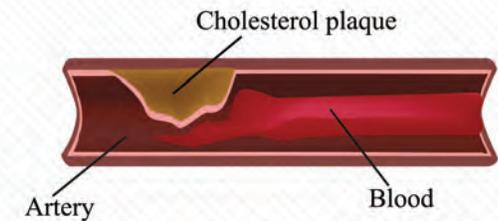
Cardiovascular Disease

Cardiovascular Disease is the number one cause of death in the US, this includes males and females. Cardiovascular diseases include disorders of the heart and blood vessels. Coronary artery disease, or CAD, is the most common cardiovascular disease in the USA. In CAD, plaque builds up in the coronary arteries, which are arteries that supply blood to the heart muscle itself. These plaques can cause narrowing of the vessels, blockages, and subsequent ischemia. Ischemia is when blood is unable to reach its final destination. The target organ may then suffer necrosis, or tissue death, from lack of blood supply. The narrowing of the arteries from plaques is called 'atherosclerosis.' In addition to causing ischemia, the plaques contribute to angina, or chest pain. Furthermore, the plaques may loosen and dislodge, leading to blood clots and stroke.

Some of the serious conditions associated with cardiovascular disease include hypertensive heart disease ("hypertension" refers to high blood pressure), heart attack- also called "myocardial infarction," stroke, heart failure, and heart valve problems.

Atherosclerosis

#1 cause of all deaths



If a blockage occurs in the heart - a heart attack, and if in the brain - a stroke.



Cardiovascular disease is closely related to inflammation. The inflammatory process consists of a cascade of events in response to injury or trauma which cause changes to the tissues, cells, and blood vessels surrounding the inflamed area. White blood cells release inflammatory mediators such as cytokines, leukotrienes, and prostaglandins.

Although it can occur anywhere in the body, inflammation specifically plays a role in the development and progression of coronary artery disease. When inflammation occurs in the coronary arteries, it can trigger a series of events that can lead to heart attack and stroke: plaque, rupture of the plaque, thrombus (clot) formation, embolization into the blood vessels, and ultimately heart attack or stroke.

Clearly then, cardiovascular disease (CVD) is not simply a matter of cholesterol. **Researchers Wang and Nakayama write, "CVDs...are the most critical global health threat, contributing to one third of the global morbidity. In most cases, these clinical conditions result from atherosclerosis, which was once identified as a lipid storage disease.** At the present time, CVD is recognized as a chronic inflammatory condition of the vessel wall that results from the...passage of cholesterol-rich...Apo-B-lipoproteins (VLDL, IDL, and LDL) from the plasma into the intima."

In other words, the passage of cholesterol from the blood into the inner layer of the blood vessels triggers an inflammatory cascade which causes atherosclerosis. The type of cholesterol that is problematic is cholesterol that is oxidized. Oxidation occurs in the body when there are an excess of free radicals that overwhelm the body's ability to neutralize them with antioxidants. Dietary cholesterol becomes oxidized when cholesterol-containing food (fatty food) is fried using high heat. When fatty foods are heated, oxygen and cholesterol interact to form oxysterols. These substances interfere with the release of nitric oxide (which regulates blood vessel dilation), stick more easily to vessel walls, and are more capable of depositing into the walls of blood vessels where they induce inflammation.

While oxidation of lipids happens naturally in the body, one way we can reduce oxidation is by being more aware of the foods we eat and their methods of preparation. Finally, exercise is one of the best ways to improve cardiovascular health in no small part because it combats obesity.

Obesity is another contributing factor to the question of cholesterol, inflammation, and heart disease. Obesity accelerates the inflammatory process because fat is metabolically active. Adipose (fat) tissue produces cytokines and other immune and inflammatory mediators which increase inflammation. CVD is also linked elevated glucose and insulin (type 2 diabetes), heredity, smoking tobacco, and physical inactivity.

Cardio Diet



Any diet should focus on reducing or eliminating: refined sugar and flour, partially hydrogenated oils, too many Omega 6 and Omega 9 fatty acids, and packaged products containing artificial colors, flavors, preservatives, and chemicals. Lack of produce (fresh fruit and vegetables) is a serious contributor to chronic and acute disease and we should all be increasing our intake of fruits and veggies.

Some vitamins are absent in plant foods so exclusive plant eaters should get these vitamins from fortified foods or vitamin supplements: Vitamin B12, Vitamin D, Iron, Calcium, Omega 3 Fatty Acids.



People following a vegetarian diet should become informed about the principles of good nutrition. These include choosing foods high in fiber, complex carbohydrates, vitamins and minerals, and knowing which foods are best to eat organic, when possible (see "The Dirty Dozen" at www.ewg.org). **Visit www.nutritionalfrontiers.com for a free recipe book!**

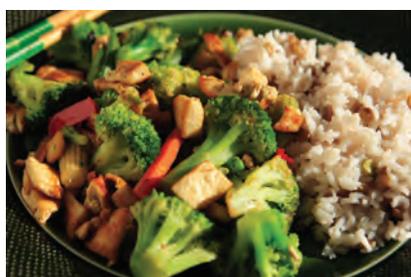
Ideas for Breakfast

- Protein smoothie using **Super Shake** (fruit, powder, greens powder, nut butter, etc.)
- Oatmeal with cinnamon, ground flaxseed, and berries
- Millet, teff, or amaranth make excellent hot breakfast cereals and could be served same as oatmeal (cook easily in rice cooker)
- Whole grain toast with nut butter (peanut, almond, sunflower seed, or cashew nut butter)
- Homemade buckwheat pancakes using Super Shake with real maple syrup
- Homemade granola
- Lox or whitefish, tomatoes, onions, on whole grain crackers



Ideas for Lunch

- Fresh salad with mixed greens and a variety of toppings such as: toasted pine nuts, walnuts, pecans, cranberries, raisins, scallions, raw vegetables, sunflower seeds, artichoke hearts, feta cheese, grilled salmon etc.
- Asian-style stir fry with onions, cabbage, broccoli, cauliflower, any other veggie, and tofu, aduki beans or kidney beans- served over rice or noodles.
- Indian-style curry with a variety of vegetables, chick peas or lentils, curry powder.





Serve with basmati rice

- Thai-style curry with a variety of vegetables, tofu or beans, coconut milk. Serve with rice or rice noodles.
- Vegetarian chili
- Vegetarian split pea soup with barley, crostini, or rice
- Alfalfa sprouts, lettuce, tomato on wholegrain bread or pita or gluten-free bread Ezekiel bread

Ideas for Dinner

- Skewered, marinated veggies cooked on the grill, served with quinoa and a side of stewed beans
- Diced veggies, sautéed with cumin, oregano and thyme. Serve with black beans and corn or wheat tortillas.
- Falafel with cucumbers, tomatoes, and tahini in a pita or over rice
- Lentil soup with salad and Ezekiel bread
- Roasted, marinated root veggies (sweet potato, white potato, parsnip, turnip, rutabaga, beets, carrots with side of stewed chick peas and wild rice.
- Tempeh stir-fried with veggies
- Butternut squash soup, potato latkes, and 4-bean salad
- Sushi
- Polenta, roasted acorn squash, stewed red beans
- Pesto with whole wheat pasta and fresh tomatoes



Ideas for Snacks

- Hummus with whole wheat pita, rice crackers, fresh raw vegetables
- Bean dip (for example, made with white beans and sundried tomatoes) served same as hummus
- Nut butter on celery stalks
- Celery stalks with humus or natural peanut butter
- Guacamole and tortilla chips
- Baba ghanoush and pita
- Pico de gallo and tortilla chips
- Berries drizzled with half and half or mixed in yogurt



Exercise



People with heart disease or at risk of developing cardiovascular disease should be counseled to gradually increase exercise to tolerance. The ideal exercise regimen should include aerobic fitness, muscle strength and endurance, and flexibility. Exercise plans must be individually tailored to meet the person's preferences, abilities, and current level of fitness. Please consult with your healthcare practitioner or a personal trainer or exercise physiologist to construct an exercise plan that meets your needs.

- Cardiovascular Training
- Strength Training
- Flexibility Training

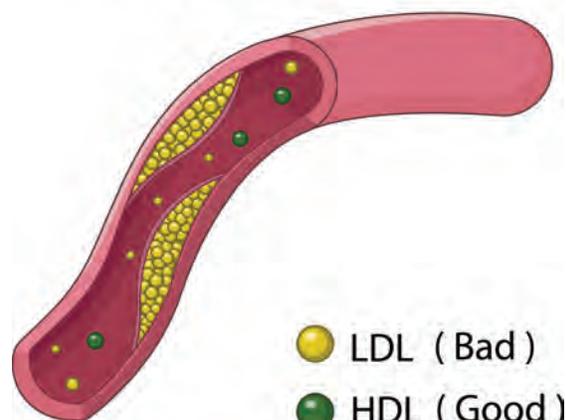
1) Cholesterol

There is a vocal minority of medical practitioners who challenge the value of monitoring cholesterol levels and treating high cholesterol as a way of managing heart disease. Some skeptics question if high cholesterol is really a cause of heart disease or simply another marker showing that heart disease may be present. The Weston Price Foundation is a source of information on this topic.

Dr. Uffe Ravnskov, MD, PhD, an outspoken and controversial critic of the conventional medical paradigm relating high cholesterol to heart disease, evaluated drug trials of statins (the popular cholesterol-reducing medications). Dr. Ravnskov reported that heart disease reduction was achieved independent of the initial cholesterol level or the degree to which cholesterol was lowered. He concludes that this strongly suggests that their efficacy was not related to these drugs' cholesterol-lowering ability but rather to some other effect of the drug.

Also, there are several different kinds of cholesterol and some healthcare practitioners are now measuring cholesterol levels in more detail, along with other blood tests, to further assess cardiovascular disease risk. The value of the standard lipid panel which measures Total Cholesterol, LDL, HDL and triglycerides is being questioned as to how predictive it is in measuring the true risk of myocardial infarction (heart attack) and stroke.

Good vs Bad Cholesterol

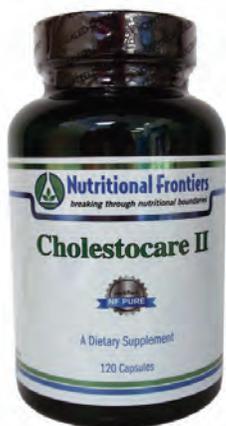


- LDL (Bad)
- HDL (Good)

Cholesterols tests

The typical lipid panel done annually to screen patients for heart disease risk includes the following 4 blood tests: Total Cholesterol, LDL, HDL, and triglycerides (TG). Some labs also include VLDL. LDL stands for "low density lipoprotein" while HDL refers to "high density lipoprotein." In common parlance, the LDL contains the "bad" cholesterol which can become oxidized and deposit in the arteries, contributing to plaques atherosclerosis. HDL contains the "good" cholesterol and seems to carry cholesterol away from the arteries and back to the liver. There are serious limitations to relying solely on the standard cholesterol panel to assess CVD risk. In fact, the standard cholesterol screening misses many patients at risk for coronary heart disease. In fact, the American Heart Association reports that 50% of men and 64% of women who died suddenly of coronary heart disease had no previous symptoms.

Nutraceutical Support



Cholestocare II

Containing the B vitamins B6, B12 and folate along with phytosterols, guggul extract, policosanol, and choline, this product assists in normalizing blood cholesterol levels. Specifically, phytosterols are plant steroid alcohols that block the over-absorption of cholesterol. Policosanol may reduce liver production of cholesterol and protect against the oxidation of lipids. Guggul lipids also protect against lipid peroxidation.

Omega 3D

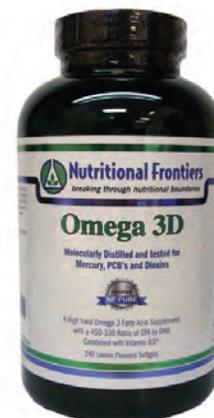
A dietary supplement to support cardiovascular function and skin and hair health.

OMEGA 3D is a blend of non-GMO natural oils from Fish that combines the health benefits of Omega 3 and Vitamin D3. It is a comprehensive

"multi" fatty acid supplement that is rich in EPA, DHA and Vitamin D3.

- It provides a healthy balance of essential fatty acids that are critical to total body health.

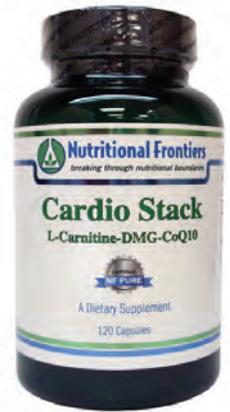
These fatty acids play a vital role in the structure of cell membranes, healthy hair and skin, and support cardiovascular, nerve, neurological and immune system functions.



- It also provides the desirable ratio of Omega 3 to Vitamin D3 for more efficient and beneficial prostaglandin production.

Cardio Stack

Cardio Stack provides 3 critical nutrients to enhance cardiovascular health. Cardio Stack may be used by people who already suffer from heart disease or by those looking to prevent the development of cardiovascular disease.



2) Blood Pressure

Blood pressure should be monitored at every doctor’s visit. Some people choose to buy home kits for testing blood pressure. If you have one of these, make sure to get it calibrated regularly, to ensure its accuracy. A surgical supply pharmacy may be able to assist you in that. Also, if you really need your blood pressure checked and cannot get in to see your doctor many fire stations will have someone on duty to take your blood pressure for you.

BMI, waist-hip ratio- Physical characteristics can give us a lot of information about someone’s cardiovascular health. Since obesity contributes to inflammation, people can target reduction in BMI and improving the waist:hip ratio to improve their risk of heart disease.



Seven Flowers BP

Traditional Chinese Medicine (TCM) formula. Beneficial in reducing mild to moderate blood pressure. Works by relaxing the nervous system and consequently reducing the stress on the cardiovascular system. In Traditional Chinese Medicine blue flowers are used to reduce blood pressure. All of the flowers in Seven Flowers BP are from the blue flower family.

Seven Flowers may nutritionally help to lower blood pressure, and lipid levels. It may also have a calming effect on the body without the usual side effects. Many people have found great relief with Seven Flowers - they sleep better, live calmer and relate to stress better. It may also help relieve eye pressure and improve vision.

Mag Complete

Magnesium is an essential mineral. It must be taken in through the diet however; with over processed food and depleted soil it is difficult to get the optimal daily intake. Magnesium supplementation is a way to support your daily intake.

- Magnesium promotes the absorption and metabolism of calcium and is responsible for the activation and function of 325 enzymes that affect various metabolic processes and physiological functions such as:

- neuromuscular contractions
- heart and cardiovascular function
- regulation of the acid-alkaline balance in the body

- Magnesium is necessary for the metabolism of carbohydrates, amino acids and fats; also for energy production, and the utilization of calcium, phosphorus, sodium and potassium which are important electrolytes.



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3) Cardio Support



Cardio Stack

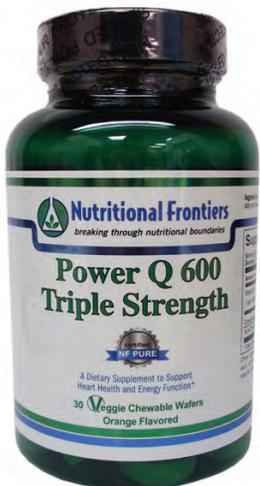
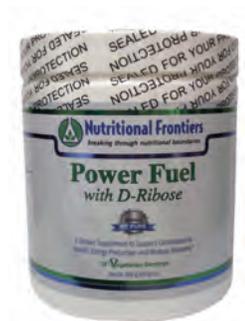
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Power Fuel

Power Fuel is a vegetarian, gluten free, orange flavored powdered formula that supports mitochondrial function to help manage fatigue and support cellular function.

Power Fuel Supports:

- Energy via the production and recycling of ATP
- Exercise tolerance
- Cardiovascular output
- Muscle strength and recovery
- Oxygen utilization and physical stamina
- Athletic performance and endurance



Power Q 600

• A Coenzyme Q10 supplement for cardiovascular, periodontal and antioxidant support. It is a vital nutrient for the formation of Adenosine Triphosphate, the basic energy molecule used by every cell.

• Power Q for Energy

Coenzyme Q10 is found in the mitochondria, where energy is made. Hundreds of mitochondria are present in each cell. CoQ10 is found in the highest concentration in “high energy” organs such as the brain, heart, muscles, liver, kidneys and pancreas.

• Power Q for Antioxidant Support

Coenzyme Q10 is an important antioxidant and is recommended to support immune system, heart, liver and gum tissue functions.

4) Additional Support



Pro Reds

Pro Reds is a high ORAC Blend, Antioxidant supplement to support brain, heart, liver, immune system health and energy levels. Resveratrol, Acetyl-L-Carnitine, DMG, ORAC Blend, L-Glutathione, and Fruit Extract Antioxidants support the cardiovascular system.*These nutrients work synergistically to protect against oxidative stress.* They also benefit circulation and support the healthy structure and function of the heart and blood vessels.

Rad Free

This free-radical fighting supplement contains the free radical scavengers grape seed extract, bioflavonoids, and resveratrol.



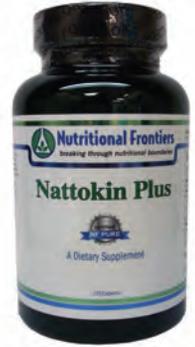


L-Arginine

This amino acid has been shown to reduce the pain of angina. It also is used clinically to improve erectile dysfunction and symptoms of congestive heart failure. Arginine helps with vasodilation.

Nattokin Plus

contains fibrinolytic enzymes and rutin, a bioflavonoid and free radical scavenger. Fibrinolytic enzymes are thought to reduce clotting, improve thrombolysis, reduce vessel wall thickening due to endothelial injury, and lower high blood pressure.



Other Tests for Cardiovascular Disease

There are numerous tests that doctors rely on to assess an individual's risk of heart disease. No one test is infallible; we have to combine information from a variety of tests along with the patient's medical history, family history, lifestyle, and body morphology/physical characteristics.

VAP Test-

The VAP stands for Vertical Auto Profile Test. The VAP test categorizes total cholesterol, HDL, LDL, and their subclasses, providing a more accurate direct measurement of LDL along with LDL pattern density. This is important information because the small, dense LDL (referred to as pattern B) confers 3 times the risk of developing plaque in the coronary arteries and having a heart attack. Lipoprotein subclasses are measured, including HDL2 and 3, IDL (intermediate density lipoprotein), VLDL1,2, and 3 (very low density lipoproteins), and the particularly dangerous lipoprotein associated with heart attacks and strokes called lipoprotein(a), or Lp(a).

At present, the VAP is the only cholesterol profile that investigates all of the risk factors identified in the NCEP (National Cholesterol Education Program Adult Treatment Panel III) guidelines.

CRP-

CRP (high sensitivity: hsCRP) – C-reactive protein is a measure of systemic inflammation. This is measured by blood test. Many prospective epidemiologic studies have shown that hsCRP is an independent predictor of MI, stroke, peripheral arterial disease, and sudden cardiac death, even in apparently healthy individuals. Not only is it a marker, but also it has been reported that CRP directly participates in the pathogenesis of coronary and aortic atherosclerosis that leads to cardiac events

Serum glucose and insulin (fasting and post-prandial)-

These tests are used to screen for and monitor diabetes, pre-diabetes, insulin resistance, and metabolic syndrome. Fasting and post-prandial insulin are unfortunately not commonly ordered in conventional medicine but they provide a wealth of information about a person's insulin sensitivity. Reduced insulin sensitivity sets a person up for weight gain, diabetes, metabolic syndrome, and their attendant complications.

Lipoprotein a: Lp(a)- consists of an LDL molecule attached to a protein called apolipoprotein (a). Lp(a) levels seem to be genetically determined and they reflect a higher than usual risk of atherosclerosis. Lp(a) is problematic both because it promotes deposition of LDL into arterial walls and also because it seems to inhibit the breakdown of clots.

Homocysteine- is an amino acid found in the blood. High levels of this amino acid correlate with the early development of cardiovascular disease. Indeed, it is an independent risk factor for heart disease. When homocysteine is elevated, we often see correspondingly low levels of vitamins B12, B6, and folate. This test is not yet routinely ordered as a cardiovascular screening test.

MTHFR DNA testing- This test is used to evaluate the cause of elevated homocysteine levels and also to determine the risk of thrombosis or premature heart disease. If someone has a relative with an abnormal MTHFR gene, or premature heart disease or thrombosis, this test would be indicated. MTHFR is an enzyme that regulates the transformation of folate from one form to another and is part of the process that transforms homocysteine into methionine. This test detects 2 common variants of the MTHFR gene, the single nucleotide polymorphisms (SNPs) C677T and 1298C. About 10-12% of North Americans have abnormalities in C677T! In terms of ethnicity, the highest frequency is in those of Mediterranean ancestry and the lowest frequency is in African Americans.

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