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Managing Cardiac Risk

by Deborah Taylor ND

Cardiologists like Deepak Bhatt, MD of the [American Heart Foundation](#) now understand that your cardiac risk is more associated with inflammation than with total cholesterol alone however getting LDL cholesterol down still forms a part of the picture.

This article scopes the tests you should have to assess cardiac risk, the supplements that are useful in reducing cardiac risk, particularly LDL cholesterol as well as the risks of statins and natural alternatives.

Tests you should have to assess cardiac risk include;

- **Liver Function Test**
- **Cholesterol (total)**
- **HDL (High Density Lipoprotein)**
- **LDL (Low Density Lipoprotein)**
- **Apolipoprotein A1**
- **Apolipoprotein B**
- **Triglycerides**
- **CRP**
- **Homocysteine**
- **Blood Pressure**
- **Cortisol**



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Liver Function Test (LFT)

This test measures the amount of particular enzymes and chemicals in the blood giving us information about damage to liver cells, sluggish bile flow or fatty liver. Elevated liver enzymes indicate there is inflammation of the liver and damage to liver cells. If the liver is damaged or under-functioning it will be less able to remove fat globules from the blood leading to fatty deposits in blood vessels, around organs and in tissues (cellulite).

Cholesterol (total)

Aim for a level under 5.5. Cholesterol is a type of fat that forms part of all animal cells. It is essential for many of the body's metabolic processes, including hormone and bile production, and to help the body use Vitamin D. Too little or too much cholesterol can be a problem. When high it is a marker of risk for coronary heart disease and can indicate diabetes or hypothyroidism. It is implicated in gall stones, impotence, mental impairment and high blood pressure. When cholesterol is too low it can lead to low hormone levels and increased cancer risk. The body can make its own cholesterol so we should aim at reducing the amount of cholesterol from our diet.

HDL (High Density Lipoprotein)

Aim for a level greater than 1.0. HDL is called the good cholesterol. High levels are associated with a decreased risk of coronary artery disease. HDL levels are more important than total cholesterol levels.



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LDL (Low Density Lipoprotein)

Aim for a level less than 2.5. LDL is called the bad cholesterol. It enters the blood stream and clogs up your arteries. As it is a low density lipoprotein it is very vulnerable to being oxidized. Oxidized LDL's are very damaging to the arteries. High levels are associated with an increased risk of coronary artery disease.

Triglycerides

Aim for a level less than 1.8. High triglyceride levels are a risk factor for coronary artery disease and are associated with diabetes and pancreatitis. Triglycerides interact with HDL in such a way that as triglycerides rise the good HDL cholesterol falls.

Apolipoprotein A1

This is another 'good' cholesterol. It is a major component of the good HDL cholesterol. Over 70% of HDL is made up of apolipoprotein A1. It promotes cholesterol being removed from the cells and blood vessels and taken back to the liver for excretion. It has an anti-clotting effect and some studies show it can reverse plaque build up in the blood vessels. If apolipoprotein A is low there is an increased risk of coronary heart disease, Alzheimer's and high triglycerides. Levels can be improved by exercise, diet, having good level of thyroid hormones and key nutrients.

Apolipoprotein B

This is another 'bad' cholesterol. It is a major component of the bad LDL cholesterol. Over 90% of LDL is made up of apolipoprotein B. It increases the cholesterol carrying capacity of LDL, allowing more cholesterol to be delivered into the body and to accumulate. When apolipoprotein B levels are high there is an increased risk of plaque formation in the blood vessels, and increased risk of heart disease.

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CRP (C. Reactive Protein)

Aim under 5, the lower the better. A reading of 3 means you are still 2 times more likely to develop cardiovascular disease. CRP is a measure of inflammation in the body. Inflammation can occur in response to infection, injury, arthritis and obesity. CRP indicates an increased risk of plaque breaking free from blood vessel walls and abnormal arterial clotting. When plaque breaks away it can block the flow of blood through a coronary artery, resulting in an acute heart attack. People with high CRP levels are three times more likely to have a heart attack, twice as likely to have a stroke, four times as likely to have vascular disease and more likely to have autoimmune problems. CRP is a particularly useful marker in women for assessing risk of coronary heart disease. When CRP is raised we know other destructive inflammatory markers are also raised.

Blood Pressure

Ideal blood pressure is 120/80 or slightly lower. Even a slight rise in blood pressure over normal levels should be taken seriously. High blood pressure is associated with coronary artery disease, heart attack, stroke, atherosclerosis, diabetes, obesity, kidney disease, hyperthyroidism, and adrenal tumors. With sustained high blood pressure the walls of the arteries become thick and inelastic and resistant to blood flow. This leads to injury to the lining of the arteries and accelerated plaque formation. When the arteries can't expand to accommodate the flow of blood, the left ventricle of the heart is impacted which can eventually lead to heart failure.



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Homocysteine

Homocysteine is an amino acid in the blood. Too much of it is related to a higher risk of coronary heart disease, stroke and peripheral vascular disease (fatty deposits in peripheral arteries). Evidence suggests that homocysteine may promote atherosclerosis (fatty deposits in blood vessels) by damaging the inner lining of arteries and promoting blood clots.

Cortisol

is the main regulator of glucose metabolism and the body's response to stress. It has a catabolic effect in the body (breaking down proteins), and stimulates conversion of proteins to glucose in the liver. It opposes the effect of insulin. Cortisol will be used to respond to any stressors that increase energy requirements, includes fasting, infection, intense exercise, pain, stress. If you are not overweight and have a healthy diet but you have high cholesterol the chances are you have "stress induced hyperlipidemia" and to assess stress as a cause you should have a fasting AM cortisol test.

Natural Management of Cholesterol on following pages



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Natural Management of Cholesterol

- 1. Omega 3 from sardines and anchovy**
- 2. Anti-oxidant therapy**
- 3. Red yeast**
- 4. B vitamins and folic acid**

Natural management of healthy cholesterol levels should involve dietary and lifestyle modifications, including a low-saturated fat, low-carbohydrate diet, and aerobic exercise.

As additional supplementation, several nutrients and botanicals can be used to help maintain lipid metabolism and support healthy cholesterol levels.

Omega 3

Omega-3 fatty acids have been shown to significantly reduce the risk for sudden death caused by cardiac arrhythmias and all-cause mortality in patients with known coronary heart disease. In addition to being antiarrhythmic, the omega-3 fatty acids are antithrombotic and anti-inflammatory. In contrast, omega-6 fatty acids, which are present in most seeds, vegetable oils, and meat, are prothrombotic and proinflammatory.

Omega three supplements from anchovy and sardines are naturally low in pro inflammatory chemicals such as heavy metals and pesticides. Krill is not recommended due to the lack of clinical trials as well as the poor sustainability of krill if harvested for human health needs.



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The Diet and Reinfarction Trial (DART) was one of the first studies to investigate a relationship between dietary intake of omega-3 fatty acids and secondary prevention of myocardial infarction. In this study, 1,015 men were advised to eat at least two servings of fatty fish per week, and 1,018 men were not so advised. At the two-year follow-up, the men who had been advised to consume fish had a 29 percent reduction in all-cause mortality but no reduction in the incidence of myocardial infarction.

Sudden death caused by sustained ventricular arrhythmias accounts for 50 to 60 percent of all deaths in persons with coronary heart disease (CHD). To date, the largest, prospective, randomized controlled trial on the effects of omega-3 fatty acids is the GISSI-Prevenzione Trial. This study included 11,324 patients with known CHD who were randomized to receive either 300 mg of vitamin E, 850 mg of omega-3 fatty acids, both, or neither. After three and one-half years, the group given omega-3 fatty acids alone had a 45 percent reduction in sudden death and a 20 percent reduction in all-cause mortality.

Anti oxidant therapy

Antioxidant supplementation can be beneficial for decreasing the oxidation of LDL. Some antioxidants such as vitamin C are now known to increase oxidative stress in active people so please consult your naturopath for the appropriate anti oxidant prescription.



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Red yeast

Numerous studies in China and the United States have demonstrated that red yeast rice preparations are helpful in maintaining blood cholesterol levels. already in the normal range. In addition to naturally occurring substances called monacolins, red yeast rice contains the phytosterols beta-sitosterol, campesterol, and stigmasterol, as well as isoflavones and trace minerals, all of which can contribute to cardiovascular health.

Red yeast rice is obtained by a specific process that ferments rice. One of the natural by-products of the rice fermentation process is citrinin, although usually the more sophisticated the fermentation process, the lower the amount of citrinin that is produced as a by-product. Citrinin is a mycotoxin. Because mycotoxins can cause inflammation and other injurious effects in the body, you must only take a low citrinin red yeast rice product so please consult a registered practitioner before supplementing.

B vitamins and folic acid

Folic acid and other B vitamins help break down homocysteine in the body. Homocysteine levels in the blood are strongly influenced by diet and genetic factors. Dietary folic acid and vitamins B-6 and B-12 have the greatest effects. Several studies found that higher blood levels of B vitamins are related, at least in part, to lower concentrations of homocysteine. Other evidence shows that low blood levels of folic acid are linked with a higher risk of fatal coronary heart disease and stroke.

In order to get an effect from vitamin B supplementation you must take them in a methylated or active form.



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The risk of using Statins

Statins work to lower blood levels of cholesterol by inhibiting a liver enzyme called HMG CoA reductase that enables the liver to make cholesterol.

What are the side effects of statin medications?

One of the most common side effects associated with statins is rhabdomyolysis, a serious degenerative muscle tissue condition that causes muscle pain and stiffness, and may lead to kidney damage. This happened to one of our patients in 2009 and five years later she is still trying to recover from the damage. Another patient of ours suffered almost complete paralysis of his lower limbs straight after taking statins.

The liver is the body's main source of cholesterol, a fatty alcohol needed to form important hormones and perform other critical cell functions.

When the liver cannot make its own, it removes cholesterol from the blood to fulfil these bodily needs. Thus, blood levels of cholesterol fall and the tendency for arteries to become clogged with fatty deposits is reduced.

But while cholesterol reduction may be the main effect of statins, the drugs are thought to perform in several other ways to reduce cardiovascular risk.



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Using statins and Co Q 10

The loss of CoQ10 as a result of statin use leads to loss of cell energy and increased free radicals which, in turn, can further damage your mitochondrial DNA, effectively setting into motion an evil circle of increasing free radicals and mitochondrial damage. As your body gets more and more depleted of CoQ10, you may suffer from fatigue, muscle weakness and soreness, and eventually heart failure. So if you're taking statin drugs, it's imperative that you take CoQ10 or, preferably, ubiquinol, the reduced, electron-rich form of coenzyme Q10.

Ubiquinol 'Rescues' Cells from Statin-Induced Side Effects

- If you have symptoms of statin damage, such as muscle pain, take anywhere from 200 milligrams (mg) to 500 mg daily
- If you just want to use it preventively, 200 mg or less should be sufficient

Ubiquinol Is More Bioavailable to Your Body and Self-Adjusts Its Dose

If you're taking statins and trying to decide between supplementing with CoQ10 or ubiquinol, conventional CoQ10 (also known as ubiquinone) is in essence oxidized CoQ10; it is "electron deficient." While the molecular structure of each is the same, because ubiquinol has two extra electrons it can donate them, enabling it to slip through the cell membrane more readily, and making it a very strong fat-soluble antioxidant – strong enough to even help regenerate other antioxidants (like vitamins E and C) in your body. In essence, taking CoQ10 is also like taking oxidized vitamin C or E—something that would not be recommended; the unoxidized form Ubiquinol is preferable.

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For more information on correct dosages, testing and diet and lifestyle modifications please consult a registered naturopath.

NatMed offer personalised diet, supplementation and lifestyle programs which have been trialed in our clinic for over 15 years. Consultations are available in person, by phone, email or Skype.

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