Heart health in a heartbeat
Preventing heart disease naturally

Michael T. Murray, ND

Each day the human heart beats 100,000 times and pumps up to 5,000 gallons of blood. That's a lot of work, and it illustrates how essential the heart is in delivering oxygen and nutrients to all parts of the body.

Having a healthy heart and circulatory system is essential to a long and healthy life. However, heart attack or stroke is by far the biggest cause of death in North America.

What is heart disease?
The term heart disease most often refers to the buildup of plaque containing cholesterol, fatty material, and cellular debris in the coronary arteries through the process of atherosclerosis (hardening of the artery walls).

"Genetic factors play a role in some cases, but heart health most often ultimately revolves around dietary and lifestyle choices."

A heart attack (myocardial infarction) occurs when something blocks the flow of blood to the heart—it can be a clot, a spasm of a coronary artery, or accumulation of plaque. This hard-working pump requires a steady supply of oxygen and other nutrients. The coronary arteries feed the heart. If something interrupts the blood supply, the starved muscle tissue begins to die very rapidly. The longer the blockage lasts, the greater the risk that the heart attack will be fatal.

Reduce major risk factors
The good news about heart disease is that it is usually highly preventable. Since it is often a silent killer, in that the first evidence of heart disease is a fatal heart attack, it is important to be aware of the major risk factors for developing heart disease:
- exposure to cigarette smoke
- elevated blood cholesterol levels
- high blood pressure
- diabetes
- physical inactivity

If your lifestyle includes two or more of these major factors, your risk increases significantly. For example, if you smoke, have high cholesterol, and have high blood pressure, you are more than 700 times more likely to develop heart disease—and you could die 20 to 30 years sooner—than someone without any of these factors.

In addition, there are several other risk factors that have been shown in some studies to be as important as the major risk factors. These are:
- elevation of markers of silent inflammation such as C-reactive protein
- low levels of omega-3 fatty acids
- low dietary antioxidant intake

Lifestyle prescriptions
To significantly reduce risk for heart disease, it is also important to follow a health-promoting lifestyle that includes avoiding cigarette smoke, engaging in regular physical activity, getting enough sleep each night, and dealing with stress effectively through such measures as meditation, prayer, yoga, Tai Chi, or deep breathing exercises.

Regular physical exercise is essential in reducing the risk of heart disease and strokes. It accomplishes this by
Multiple risk factors exponentially increase risk

<table>
<thead>
<tr>
<th>Condition</th>
<th>Increased risk of heart disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence of 1 major risk factor</td>
<td>30%</td>
</tr>
<tr>
<td>High cholesterol + high blood pressure</td>
<td>300%</td>
</tr>
<tr>
<td>High cholesterol + smoking</td>
<td>350%</td>
</tr>
<tr>
<td>High blood pressure + smoking</td>
<td>350%</td>
</tr>
<tr>
<td>Smoking + high blood pressure + high cholesterol</td>
<td>720%</td>
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</tbody>
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"High intake of fish oils reduced risk of heart disease by 47 percent."

lowering cholesterol levels, improving blood and oxygen supply to the heart, increasing the functional capacity of the heart, reducing blood pressure and obesity, and exerting a favourable effect on blood clotting.

**Food prescriptions**

One diet that appears to provide significant protection against heart disease is the traditional Mediterranean diet. This diet, high in plant-based fibres and low in saturated fats, can play a role in fighting heart disease and cancer, as well as type 2 diabetes (see sidebar).

The two components of the Mediterranean diet that have received a lot of attention are red wine and olive oil. Red wine is thought to be responsible for the "French paradox," a term used to explain why the French consume more saturated fat than Americans, yet have a lower incidence of heart disease. The protective effect is the result of the flavonoids in red wine, which protect against oxidative damage to the arteries from LDL (the "bad") cholesterol.

Olive oil contains a heart protective monounsaturated fatty acid, oleic acid, and several antioxidant agents that prevent circulating LDL cholesterol from becoming damaged and subsequently damaging arteries. Olive oil lowers harmful LDL cholesterol levels and increases the level of protective HDL cholesterol. It has also been proven to lower elevated blood triglycerides.

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**The Mediterranean diet**

<table>
<thead>
<tr>
<th>The diet offers an abundance of plant food, including fruits, vegetables, breads, pasta, potatoes, beans, nuts, and seeds.</th>
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</thead>
<tbody>
<tr>
<td>Foods are minimally processed, and there is a focus on seasonally fresh and locally grown foods.</td>
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<tr>
<td>Fresh fruit is the typical daily dessert, with sweets containing concentrated sugars or honey consumed a few times per week at the most.</td>
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<tr>
<td>Dairy products, principally cheese and yogourt, are consumed daily in low to moderate amounts and in low-fat varieties.</td>
</tr>
<tr>
<td>Fish is consumed on a regular basis.</td>
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<tr>
<td>Poultry and eggs are consumed in moderate amounts, at most one to four times weekly.</td>
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<tr>
<td>Red meat is consumed in small amounts and infrequently.</td>
</tr>
<tr>
<td>Olive oil is the principal source of fat.</td>
</tr>
<tr>
<td>Wine is consumed in low to moderate amounts, normally with meals.</td>
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</tbody>
</table>
Dietary recommendations for preventing heart disease

Reduce the amount of saturated fat, trans fatty acids, cholesterol, and total fat in your diet by eating fewer animal products and more plant-based foods.

Increase your intake of omega-3 oils by eating flaxseed oil, walnuts, and cold-water fish. Eat at least two, but no more than three, servings of fish per week. There is considerable evidence 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 and strokes. Atherosclerosis is associated with a deficiency in omega-3 oils.

Increase the intake of heart-healthy monounsaturated fats and the amino acid arginine by eating more nuts and seeds, including almonds, Brazil nuts, coconut, hazelnuts, macadamia nuts, pecans, pine nuts, pistachios, sesame and sunflower seeds, and using a monounsaturated oil, such as olive, or macadamia oil for cooking purposes.

Eat five or more servings daily of a combination of vegetables and fruits, especially green, orange, and yellow vegetables, dark coloured berries, and citrus fruits. Antioxidant compounds in these plant foods—carotenes, flavonoids, selenium, vitamin E, and vitamin C—are important in protecting against the development of atherosclerosis. These foods are also rich in B vitamins that can help lower homocysteine levels.

Increase your intake of fibre. A high-fibre diet has been shown to be protective against atherosclerosis. Dietary fibre, particularly the soluble fibre found in legumes, fruit, and vegetables, is effective in lowering cholesterol levels.

Limit the intake of refined carbohydrates [sugar and refined grains], which are a significant factor in the development of atherosclerosis. Sugar consumption elevates levels of the hormone insulin leading to the development of insulin resistance, which, in turn, is associated with increased cholesterol, higher blood pressure, and risk of death from cardiovascular disease.

What is pharmaceutical grade fish oil?

In order to represent itself truly as pharmaceutical grade, a fish oil product must possess the following characteristics:

- It must be manufactured in a certified Good Manufacturing Practices (GMP) facility approved for pharmaceutical products.
- It must be manufactured according to pharmaceutical standards that include quality control steps to ensure the product is virtually free from lipid peroxides, heavy metals, environmental contaminants, and other harmful compounds.
- It must provide at least a 60 percent concentration of the most active long-chain omega-3 fatty acids (EPA and DHA).
- The ratio of omega-3 fatty acids to arachidonic acid must be greater than 50:1.
- It must contain an optimal amount of natural vitamin E as a preservative.

C-reactive protein

Inflammation is an important factor in the buildup of atherosclerotic plaque. To measure the degree of inflammation, physicians determine the level of C-reactive protein (CRP) in the blood. Most studies show that the higher the CRP levels, the higher the risk of developing heart attack.

If the CRP level is lower than 1.0 mg/L, a person has a low risk of developing cardiovascular disease. If the CRP is between 1.0 and 3.0 mg/L, a person has an average risk. If the CRP is higher than 3.0 mg/L, a person is considered at high risk.

Dietary and supplementary interventions alone have been shown to lower the CRP levels. In particular, the Mediterranean diet (see sidebar) can be quite effective in lowering CRP levels to normal.

Natural heart-healthy supplements

In this age of increased pollution, processed foods, and fast-paced, stressful lifestyles it is vitally important to give your body all the tools that it needs to function optimally. There are three key supplements: 1) a high-potency multiple vitamin and mineral formula, 2) a greens drink product, and 3) a pharmaceutical grade fish oil supplement.

Mega multis A high potency multiple vitamin and mineral formula provides a strong foundation for optimum health, especially one that provides sufficient levels of antioxidant nutrients. A deficiency of any nutrient can mean the difference between health and disease. Studies have shown that people taking a multiple vitamin and mineral formula may experience higher energy levels,
improved brain function, fewer colds or infections, improved ability to deal with stress, greater sense of well-being, and reduced risk for cancer, heart disease, and type 2 diabetes. In regards to heart disease, one study in Canadian men found that those who took a multiple vitamin and mineral formula on a regular basis had a whopping 69 percent lower risk for heart disease than those who did not take a supplement.

A greens drink is a concentrated powdered drink mix that provides powerful phytochemicals from super green foods like barley grass, wheat grass, chlorella, and spirulina. The compounds in these foods are powerful antioxidants and fill in any gaps that might be missing from your diet. Some greens drinks are so concentrated that one serving is equal to five to ten cups of mixed salad. Diets rich in phytochemicals have shown significant protection from heart disease and strokes.

Fish oils One of the most important nutritional supplements for preventing heart disease is a pharmaceutical grade fish oil. The concept that eating fish may reduce the risk of heart disease began in the 1970s when it was noted that among the Eskimos in arctic Greenland, where high consumption of marine animals was the normal diet, heart disease was very low. Subsequent studies in other cultures where fish and seafood consumption was high showed similar findings. For example, the inhabitants of the Japanese island of Okinawa, who primarily ate fish, were also observed to have a very low incidence of heart disease mortality.

In order to better assess the protective effects of fish consumption against heart disease, researchers conducted large studies in which they tracked dietary intake of fish and other seafood over a long period of time. As the results of these studies became available in the mid-1980s and 1990s, they provided even stronger evidence that higher levels of fish consumption were associated with a lower risk of mortality from heart disease.

It is now estimated that individuals whose diets include a higher intake of fish oils reduce their risk of heart disease by roughly 47 percent compared with those who do not eat fish or take fish oil supplements. In fact, the level of omega-3 fatty acids in the body has been shown to be the most accurate predictor of heart disease risk.

Fish or fish oil supplements?
Based upon the research that assesses the amount of
omega-3 fatty acids required to offer protection against heart disease (1,000 mg daily of EPA and DHA), your best bet is supplementation. You cannot rely on fish alone, in part because you need to limit intake of fish to no more than two to three servings weekly to reduce your chances of eating fish tainted with chemical toxins.

Nearly all fish contain trace amounts of methyl mercury. The fish most likely to have the lowest level of methyl mercury are salmon, cod, cold-water tuna, farm-raised catfish, and herring. Fish absorb methyl mercury from water and aquatic plants. Larger predatory fish also absorb mercury from their prey. Methyl mercury binds tightly to the proteins in fish tissue, and cooking does not reduce the mercury content significantly.

What's the bottom line? Don't avoid eating fish entirely, but make wise choices Fish consumption is definitely a health-promoting dietary practice; however, it simply makes sense to rely on pharmaceutical grade fish oils to achieve your daily intake of 1,000 mg for EPA and DHA.

For most people, heart disease is entirely preventable. Certainly, genetic factors play a role in some cases, but heart health most often ultimately revolves around dietary and lifestyle choices. Your heart deserves to be allowed to serve you well, so take care of it—naturally!

Michael T. Murray, ND, is widely regarded as a leading authority on natural medicine. He is the author of over 20 books, including The Encyclopedia of Healing Foods (Atria, 2005).