

A DOCTOR'S TREASURY OF

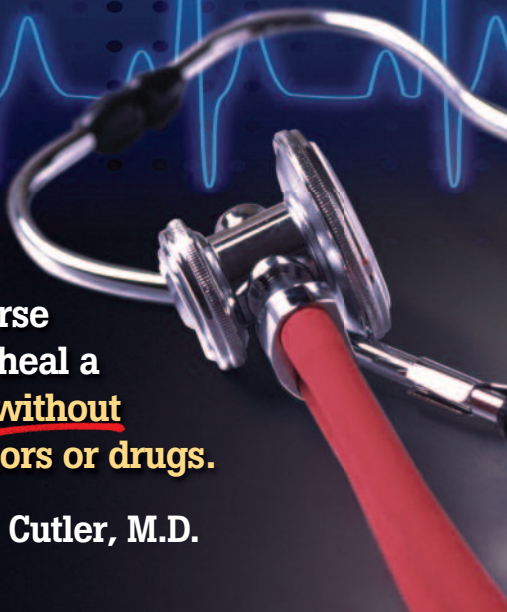
# Hushed Up Natural Heart Cures

*And Deadly Deceptions of  
Popular Heart Treatments*



Avoid a heart  
attack, unclog  
your arteries, reverse  
heart disease and heal a  
failing heart—without  
surgery, doctors or drugs.

Michael Cutler, M.D.



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Popular Heart Treatments*

By Michael Cutler, M.D.

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## Introduction

**C**ardiovascular disease kills more Americans than any other single medical problem. Types of cardiovascular disease include coronary artery disease, blockages of blood vessels leading to critical organs such as the brain (cerebral vascular disease) and heart failure. Circulatory difficulties can engender heart attacks (myocardial infarction) and cerebral vascular accidents (strokes). According to the national statistics, someone in the U.S. dies from cardiovascular disease every 39 seconds: More than 630,000 die every year and more than 61 million Americans suffer from cardiovascular illness. Today the risk of getting heart disease after age 40 is a frightening 66 percent for men and 50 percent for women. That means all of us must take a serious look at what we are doing for heart health.

Decades ago, the 1992 Bogalusa (Louisiana) Heart Study<sup>1</sup>, published in the *American Journal of Cardiology*, gave the American medical community a loud wakeup call about the seriousness of the heart disease epidemic. In that study, researchers autopsied 204 people aged 2 to 39 years who died in accidents and who were thought to be disease-free at the time of death. Shockingly, when the scientists measured arterial plaque in these folks they found extensive build up in many of these young, “disease-free” individuals. Added to that, they found fatty streaks in the aortas of virtually all the adults in the study. (The aorta is the body’s main artery, the large vessel that carries blood from the heart to be sent to all the branch arteries of the body.) Half of the children aged 2 to 15 years had fatty streaks in their coronary arteries. In that group, 8 percent also already had fibrous plaque in their arteries, blockages that had begun to impede blood flow. And more than two out of every three of the young people aged 26 to 39 years had developed these circulatory impediments.

The remarkably early ages at which heart disease started represented shocking news. And it is now known that these developments take place when young people eat foods that incite the body to inflammation.



Today we possess many different strategies for preventing cardiovascular disease and other strategies for its treatment. But once this disease takes its toll, there is little one can do to restore function to severely damaged organs.

Despite the magnitude of the problem, most people lack knowledge about what causes this disease, how to prevent it, and the safe, natural treatments that are available. Because this disease presents such extreme danger to the body, you need to understand how and why this and other chronic diseases develop. Our refusal to change the unhealthy lifestyle habits that are at the root of cardiovascular disease reflects a hazardous naiveté. Regrettably, many American adults hold to the false notion that their health is out of their control and that their genes control their health destinies. At the same time, a comprehensive effort to educate the public about how to lower the risk of cardiovascular disease is lacking. Added to that, the information that is available is uninspiring and doesn't motivate the average person to take the measures that would promote better long-term health. Unfortunately, our health authorities—the government, physicians and pharmaceutical companies—have no effective plan to correct the fatal cardiovascular path most people are traveling.

In today's chaotic health climate, every family has to learn the principles of optimal health on its own and take measures to safeguard the health of family members.

The purpose of this book is to offer your family knowledge of how to control and overcome the factors that contribute to cardiovascular disease, factors which are often identical to the elements that cause other chronic illnesses as well. In these pages are the facts you need to know and act on to prevent cardiovascular disease with reasonable certainty. You will also learn about reasonable treatment options, both conventional medical techniques and natural, non-surgical, non-pharmaceutical therapies. This book focuses on how you can achieve a path of health, happiness and fulfilled longevity.

To your health,

A handwritten signature in black ink that reads "Michael Cutler M.D." in a cursive script.

Michael Cutler, M.D.

## CHAPTER 1

# Understanding Cardiovascular Disease, Heart Attack And Stroke

## Anatomy, Physiology and How Arteries Clog

**A**rteries are blood vessels with muscular walls that carry blood away from the heart to organs of the body. They bear the force of each heartbeat and therefore must be strong enough to endure approximately 100,000 heart pulsations daily—that's more than 36 million times each year. The walls of arteries must also be flexible and adjust for varying pressures due to the heart's variation, gravity changes from bodily positioning, body and blood fluid volume changes, and even variations in blood thickness and acid-base status. Flexible arteries are healthy, while thickened or hardened walls without elasticity are the result of atherosclerosis.

The outer layer of your arteries, the adventitia, is a flexible connective tissue that surrounds the next layer—the elastic smooth muscle. The inner layers are the basal lamina and the endothelium. The muscle provides the contractile strength to expand and contract with each heartbeat. The endothelium is like the “skin” on the inside of the artery where blood flows. It is here where most damage can occur, leading to clot formation, calcium deposition and finally, atherosclerotic plaque.

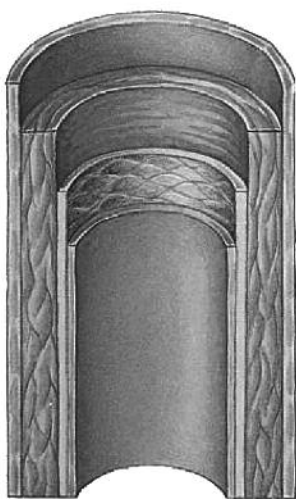
At least one out of every two Americans over age 65 has atherosclerosis<sup>2</sup>. Even though it is very common, it is not part

of the normal aging process. Understanding the process of how atherosclerosis develops will give you insight into the many causes and triggers of this disease, which are important to know so you can prevent them. Now let me give you some details on this process.

## **The Process of Atherosclerosis**

Atherosclerosis is an inflammatory process. It begins with small areas of damage to the endothelium or as a dysfunction that causes the endothelium to act like it has been damaged. This damage triggers increased clotting, accumulation of white blood cells to the site, then a chemical cascade of cytokines (chemicals that trigger more immune system cells of inflammation) and adhesion molecules.

When the endothelium becomes more permeable (opens up), cholesterol molecules and other proteins in the blood get inside the endothelium to the basal lamina and cause scarring, causing further plaque buildup.



At this stage, cholesterol molecules become modified so they are sticky and are incorporated into larger molecules such as immune complexes. These modified cholesterol molecules are digested by fighter white blood cells (an immune reaction) leading to further inflammation inside the vessel wall. Smooth muscle cells and the fat-laden, white blood cells make up what is called a “foam cell.” In a conglomerate, a “fatty streak” is formed consisting of lipids and fibrin clot material, which act as “mortar.”

<http://www.dkimages.com/discover/previews/961/50311095.JPG>

The final step to plaque formation then occurs when smooth muscle

cells attempt to reverse the injury to the endothelium by producing collagen. This forms a cap over the site of injury, to which calcium accumulates to form a strong bone-like material (the “bricks”).

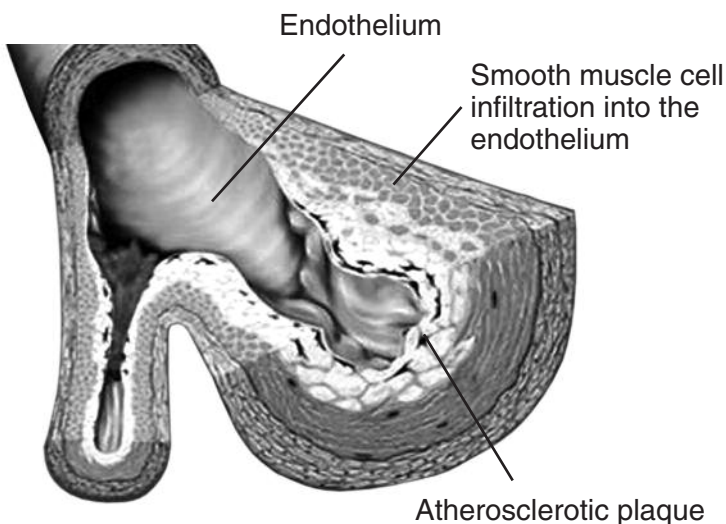
This complex array of foam cells, lipid accumulation, and calcification is called atherosclerotic plaque. Plaques typically become unstable as they grow and rupture, exposing them to the contents of the blood. Clotting proteins and fat accumulate around the ruptured plaque, resulting in a larger clot to which calcium attaches and the plaque grows inside the vessel wall. Large clots and large plaques can easily block the flow of blood to the heart muscle causing a heart attack.

## Causes of Atherosclerosis

So what kinds of things play a causative role in this process of endothelial damage and dysfunction? Known causes of dysfunction include:

### Infections

- Hidden bacterial infections such as *Chlamydia Pneumoniae* and *Helicobacter Pylori*.



- Hidden virus infections such as Cytomegalovirus (CMV) and Herpes Simplex Virus (HSV).
- A report reveals that antibodies to CMV and Chlamydia Pneumoniae may be more accurate predictors of atherosclerosis than other well-known risk factors such as hypertension, diabetes, obesity and hypercholesterolemia.<sup>3</sup>

### **Oxidative stress**

- Free radical molecules result from cigarette smoke, radiation and metal toxicities (such as mercury).
- LDL cholesterol oxidizes to become a sticky part of atherosclerotic plaque.

### **Increased blood turbulence**

- Increased turbulence of blood flow from thickened blood damages the endothelium, triggering more inflammatory chemicals and clotting factors.

Obviously, cholesterol is just one of many contributing causes of atherosclerosis. More important than maintaining low cholesterol is to minimize the other causes of inflammation that trigger the arterial blockage. Inflammation also causes low density lipoprotein (LDL) cholesterol to become oxidized. For example, poor health habits and normal aging both appear to damage the endothelium such that the endothelium boundary is broken, inflammation begins and abnormal platelet aggregation occurs. Subsequently atherosclerotic lesions form in response to this arterial wall injury.

In this book, I cover in detail the various health habits that cause inflammation with a focus on how to reverse this disease. Likewise, there are nutrients known to help maintain a healthy inner arterial lining. Some of these are folic acid<sup>4</sup>, vitamin C<sup>5</sup>, fish oil<sup>6</sup> and alpha lipoic acid.<sup>7</sup> It is no coincidence that nutrients which suppress chronic inflammation also protect the endothelium. These nutrient supplements are covered later in this book in **Chapter 4: Alternative and Natural Interventions for Cardiovascular Disease**.

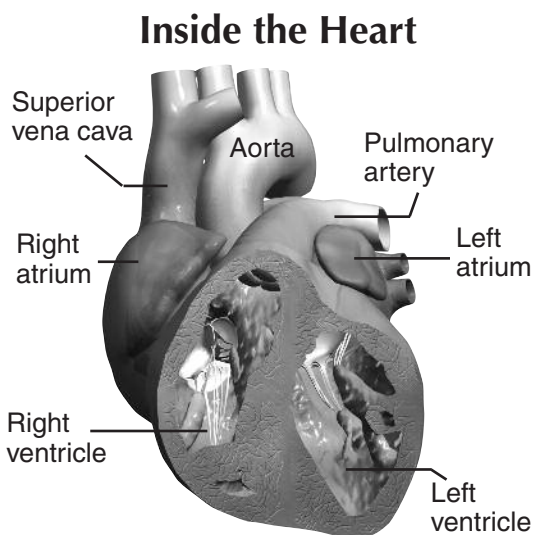
## **An Inside Look at the Heart And the Damage from a Heart Attack**

Your heart is surprisingly small. Only about one-third larger than your clenched fist. Your heart's primary purpose is to pump blood and nutrients 24 hours a day to your more than 300 trillion cells. Your heart contracts and relaxes approximately 100,000 times each day, pumping about 2,000 gallons of blood. This means that during a 70-year lifetime the heart beats more than 2.5 billion times, and pumps approximately one million barrels of blood.

Your entire circulatory system is comprised of your heart and the vessels that carry blood from your heart to all other organs and tissues. These vessels are the arteries, arterioles and capillaries. It also includes your lungs and the veins that carry blood from your lungs back to the heart. And finally, it includes all the other deep and superficial veins, which carry blood back to your heart. If all your blood vessels were laid end-to-end they would measure nearly 75,000 miles—twice the circumference of the earth. Now, let's look a bit closer at the heart itself.

### **Anatomy and Physiology of the Heart**

The amazing power behind the ability of your heart to continuously beat as described above is its electrical power. It has its own electric generator, called the “pace-maker” or sinoatrial (S-A) node, which is located at the top of the right atrium imbedded in the muscle. This S-A node sends an electrical wave to the lower atrioventricular



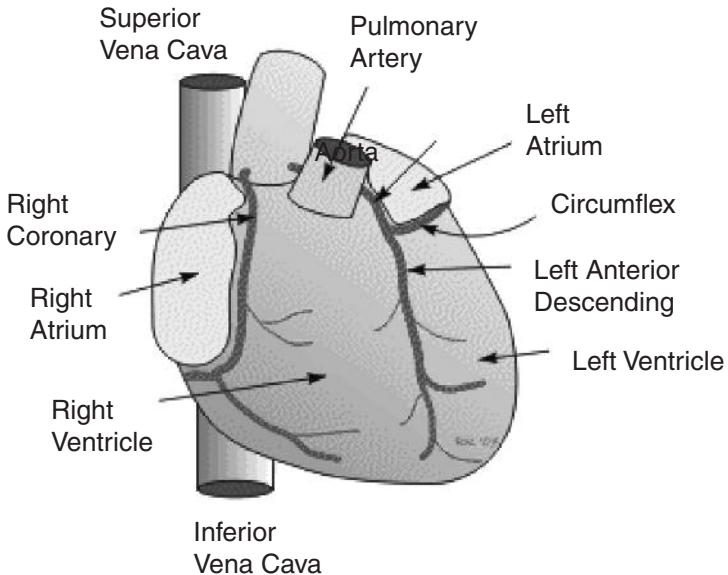
(A-V) node. From the A-V node, the electrical pulsation spreads throughout the specialized muscle fibers of the heart and valves in a coordinated fashion that creates a contraction. This contraction creates a perfect sequence so that each chamber of the heart keeps the blood flowing in one direction only.

The two weaker chambers, called atria, and the strong muscular-walled chambers, called ventricles, each have a valve that prevents the back flow of blood. Note these structures in the diagram on the next page. You can imagine that when either a valve or the wall of a ventricle gets weak, it doesn't take long to cause the symptoms of light-headedness, shortness of breath or even pain in the chest. Thank goodness for the talented cardiovascular surgeons today that can repair valves, reconstruct vessels and even transplant a failing heart!

Also remarkable is the regulation and interconnection of your heart with your other organs. For example, the heart is slowed during times of relaxation and feeding. The specialized nerves called the parasympathetic nerve system control this behavior. There are different nerves called the sympathetic nerve system that cause it to speed up or beat stronger in times of stress, exercise, changes in blood volume, changes in body temperature and changes in body positioning.

A delicate balance of the three main mineral electrolytes keep the heart muscle contracting: sodium, potassium and calcium. Several disease states are known to affect these minerals in the body to the point where the heart's electrical activity and muscle pumping ability threatens failure.

The arteries to the heart muscle itself are called coronary arteries. The three main vessels are the right coronary, the left anterior descending and the circumflex artery. Blockage anywhere along these vessels can cause ischemia (lack of oxygenated blood) and result in damage to the muscle known as myocardial infarction. That is, infarction ("death") of an area of the wall of the ventricular muscle. This can make it weak and vulnerable to pump failure, or can even cause wall motion abnormalities to the point that it goes



<http://www.cvphysiology.com/Blood%20Flow/BF001.htm>

into “fibrillation,” which can be lethal within minutes if not reversed. Chronic atrial fibrillation makes you much more susceptible to heart failure.

## Heart Attack Symptoms

It is not enough just to say that chest pain is the symptom of a heart attack. Why? Because there are a number of other symptoms and signs that may be present that you may miss if you only consider chest pain. Be aware of the following symptoms that may be telling you your heart is in serious trouble:

- Upper abdominal pain or upper back pain, especially in women
- Shortness of breath
- Dizziness
- Left shoulder pain or numbness; aching down the left arm or into the jaw
- Chest heaviness, tightness, squeezing, burning, pressure or discomfort



- Palpitations of the heart (beating fast or irregularly)
- A tight throat or a lump in the throat
- A cold sweat
- Nausea
- A sense of impending doom
- Weakness
- The symptoms begin low intensity and increase over several minutes
- It is NOT made worse by taking a deep breath, pressing on your chest or with movement of the body area where symptoms are felt.

### **Intermittent Claudication Symptoms**

When arterial blood flow to your lower legs gets significantly limited it causes claudication. It is easily recognized as pain in your calf or thigh muscles during exercise that gradually manifests more often over the years. This peripheral artery disease is a result of atherosclerosis in these arteries.

### **Pulmonary Embolism**

A clot which travels to the lungs from the heart or extremities is known as a pulmonary embolism. This may also be a manifestation of atherosclerosis. Signs and symptoms of pulmonary embolism can be:

- Sudden shortness of breath, typically, but not necessarily during exercise
- Pain that mimics a heart attack—pain in your chest, shoulder, arm, neck, jaw or back. The pain is usually sharp but may be aching, and becomes worse with deep breathing or with coughing, bending or stooping. The pain worsens with exercise.
- Blood in the sputum from coughing
- Rapid heartbeat (tachycardia)
- Wheezing
- Leg swelling (a deep vein clot may be the source of the embolus)
- Clammy or pale skin (from lack of oxygen to your body)
- Lightheadedness, fainting, anxiety or weak pulse may also be present.

## The Brain and What Happens During a Stroke

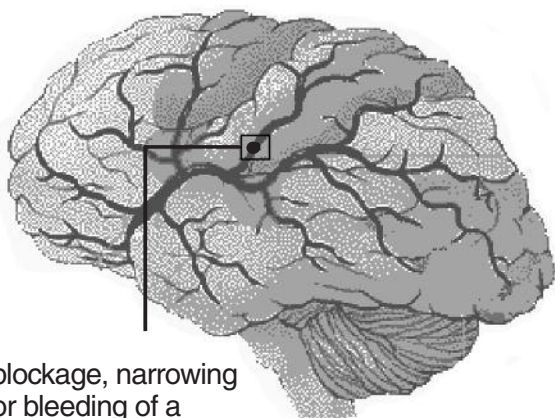
Now that you have a fairly in-depth understanding of atherosclerosis in the heart vessels, you also know how vessels in the brain become diseased. Stroke is the leading cause of adult disability in the U.S. and Europe. Approximately 800,000 Americans have a stroke every year and 150,000 Americans die from it. Stroke, or cerebral vascular accident (CVA), is like a heart attack in that it is an infarct (death) of the brain tissue. Brain tissue gets starved of oxygen and nutrients, resulting in any one of the signs and symptoms of stroke.

This occurs either because of a clot blocking the flow of blood to an area (thrombotic and embolic stroke—80 to 90 percent of strokes) or from bleeding (hemorrhagic stroke—10 to 20 percent of strokes). So-called mini strokes, which have temporary symptoms similar to those of full-blown strokes, are sometimes an important warning sign of an impending stroke.

Stroke rarely is a painful event, unlike a heart attack. Stroke does not usually cause death either, unlike a heart attack, which is often a fatal event. Rather, there is often a partial return of brain function in weeks to months afterwards as the damaged area gets new blood flow and tissue begins to regenerate. The kinds of stroke include:

### Thrombotic Stroke

This refers to a thrombus (blood clot) that forms around plaques of atherosclerosis. The pattern is usually a series of small strokes over the years, which also causes multi-infarct dementia. Thrombotic strokes either occur in the small vessels inside and around the



blockage, narrowing  
or bleeding of a  
blood vessel

<http://images.google.com/images?q=brain+blood+vessels&gbv=2&ndsp=18&hl=en&start=0&sa=N>

brain or in large vessels going to the brain. If a thrombus breaks off and travels in the blood stream to where it gets lodged it is called an embolus.

### **Embolitic Stroke**

An embolitic stroke occurs when an embolus travels to the brain and gets lodged there, cutting off the blood supply. Emboli can also be made of fat, air, cancer cells or bacterial clumps from an infected heart valve. Typically, emboli are clots that form in the heart or the neck (carotid) arteries.

### **Systemic Hypoperfusion**

When the heart fails or has a rhythm disturbance such that blood pressure drastically falls, the blood supply can drop, causing a stroke effect to the brain. An embolus in the lung, if large enough, can even slow the blood supply to the brain and cause a stroke.

### **Hemorrhagic Stroke**

Any kind of bleeding into the brain tissue from trauma or a vessel that bursts can cause a hemorrhagic stroke. The latter is usually due to high blood pressure, bleeding disorders, amphetamine or cocaine drug use, or blood vessel malformations.

### **Signs and Symptoms of a Stroke**

Stroke signs and symptoms usually come on quite rapidly — within seconds to minutes. Damaged tissues in the brain correspond with the part of the body controlled by that part of the brain. The signs and symptoms can vary widely. For example, one may experience any of the following:

- Hemiplegia (part or all of one side of the face or body goes weak)
- Numbness or vibratory sense loss
- Altered smell, taste, hearing or eyesight
- Facial muscle drooping or weakness, including the muscles that move the eyes
- Weakened swallowing function
- Weak neck muscles or tongue muscles
- Balance abnormalities, trouble walking, or dizziness
- Altered breathing or heart rate
- Inability to talk or comprehend language (aphasia)
- Loss of memory or confused thinking patterns

## CHAPTER 2

# Risk Factors And Making the Diagnosis

## Risk Factors for Coronary Atherosclerosis

**Y**ou might be wondering what the difference is between a risk factor and an actual known cause of heart disease. In fact, these are nearly synonymous terms. Risk factors are all the findings (such as lab results, other illnesses, lifestyle habits, etc.) which correlate with an increased likelihood of having atherosclerosis, heart attack or stroke. You could even say this includes all risk factors and their risk factors. For example, any risk factor for sedentary lifestyle (such as owning a TV or feeling you aren't athletic) would also contribute to the risk of atherosclerosis, though it may not be a direct cause.

Known causes, on the other hand, signify the very underlying factors that are known to actually contribute to the development and progression of atherosclerosis. The underlying causes of atherosclerosis, for example, are shared with the causes of obesity, both being inflammatory processes.

As you read the list of risk factors for atherosclerosis below, please keep them in a healthy prospective. Having a risk factor that you cannot change is really no fun to talk about. What are you able to do about being male or over age 65, for example? These are the risks of heart attack that you cannot change:

- **Family history** of coronary heart disease.
- **Aging**, especially being over the age of 65. Despite having normal cholesterol and no other risk factors, just the process of aging itself promotes damage to blood vessels.

## ■ Female menopause

More importantly, knowing the risk factors that you CAN modify or eliminate is what you are interested in. These are the risk factors that you can alter:

- **Tobacco smoking** doubles<sup>9</sup> your risk of a heart attack.
- **High blood pressure** can be caused by inflammatory foods, stressful lifestyle, smoking and anything else that causes or promotes atherosclerosis. When the heart beats and pushes blood against a hardened artery, the pressure in the vessel must necessarily go higher (momentarily) while the blood moves further along the arterial path, compared to when there is flexibility in the vessel wall. The risk for high blood pressure is shared with other risks for atherosclerosis such as obesity and sedentary lifestyle.<sup>10</sup>
- **Diabetes** significantly increases heart disease risk.<sup>11</sup>
- **Lack of physical activity or exercise.** Important contribution to heart disease and heart attack.<sup>12</sup>
- **Obesity** with its multiple causes and contributors.<sup>13</sup>
- **Subtle infection with chlamydia bacteria** triggers an inflammatory response in the endothelium of your heart arteries. These are present in atherosclerotic lesions throughout the heart arteries and almost always absent in healthy arterial tissue.<sup>14</sup> Also, human herpes virus 6 (HHV-6), nanobacteria (extremely small stealth bacteria) and cytomegalovirus (CMV) have all been implicated in the development of atherosclerosis.
- **Allergies correspond with increased atherosclerosis rates.** In a 2005 *Archives of Internal Medicine* study assessing the five-year development and progression of atherosclerosis in 826 men and women ages 40 to 70, researchers found enhanced atherosclerosis among people with common allergic diseases. They confirmed that key blood components of allergic conditions such as leukotrienes or mast cells play an active part in atherosclerosis. Therefore, eliminating allergies may lower the risk of atherosclerosis.

- **Chronic infections.** The presence of chronic respiratory, urinary tract, dental and other infections were found to be independent risk factors, which quadrupled the rate of atherosclerosis in a study<sup>15</sup> where researchers followed more than 800 subjects for five years.
- **Any chronic disease state.** Chronic inflammatory disorders of many types have been linked with enhanced risk for atherosclerosis.<sup>16</sup>
- **Stress, anger and depression**<sup>17</sup> are independent risk factors for an unhealthy heart. Hostility is the “Achilles’ heel” of the heart. The heart is also adversely affected by stress and frustration via the stress hormones adrenalin, cortisol and the chemicals of inflammation. One study reports a five-fold increase in heart attacks in those who experience high and frequent anger.<sup>18</sup>

## Blood Tests Reveal Risk

Abnormal blood test results also can tell you about your risk for atherosclerosis. Lab results provide evidence of what you can do to stop and reverse the causes involved.

- **High fibrinogen**<sup>19</sup> is a marker of easy clotting. Fibrinogen is one of the clotting proteins that accumulate at the site of blood vessel injury. It is also found in higher amounts with any endothelial lesion. It then contributes to plaque buildup and arterial blockage after an unstable atherosclerotic plaque ruptures. Lowering your fibrinogen levels can be accomplished by modest alcohol consumption (one drink twice weekly), exercise and increased HDL (good) cholesterol.
- **Highly sensitive C-reactive protein** (hsCRP)<sup>20</sup> is a non-specific indicator of acute inflammation anywhere in the body, including the heart vessels. C-reactive protein is produced by the liver and interacts with the complement system as part of your immune defense system. It initiates endothelial damage and also accelerates the progression of existing artery plaque.

- **High glucose**<sup>21</sup> can directly cause atherosclerosis,<sup>22</sup> and studies show that high sugar diets of subjects with peripheral vascular disease significantly increase platelet adhesion.<sup>23</sup> Sugar also indirectly promotes heart attack by lowering the good cholesterol HDL.<sup>24, 25</sup> High amounts of sugar circulating in the blood are thought to attach to proteins, which are involved with atherosclerosis development.
- **High insulin**<sup>26</sup> in the blood actually inflicts direct damage to the endothelium. High insulin is typical for patients with Type II Diabetes Mellitus.
- **High iron**<sup>27</sup> indicates the liver is in trouble. High levels of iron promote oxidation of LDL in the damaged endothelium.
- **High total cholesterol**<sup>28</sup> (above 200 mg/dl) and high LDL cholesterol<sup>29</sup> (above 100) or low HDL cholesterol (below 45) are associated with increased heart attack rates. More important to the development of atherosclerosis are causes of inflammation compared to the level of cholesterol itself. See page 41 regarding the role of lowering cholesterol.
- **Low HDL** (the good cholesterol) is also linked to increased heart disease.<sup>30</sup>
- **High triglycerides**<sup>31</sup> are clearly tied into high insulin levels and high simple sugar intake. It is one of the markers of early metabolic syndrome.<sup>32</sup> Having high triglycerides is an independent risk factor for heart disease.<sup>33</sup>
- **High blood homocysteine** levels promote oxidation of lipids, platelet stickiness and the binding of an important fatty protein involved in clotting to fibrin. Vitamins B6, B12, folic acid and trimethylglycine (TMG) are supplements proven to lower homocysteine levels.
- **Low testosterone**<sup>34</sup> in men appears to interfere with the normal function of the endothelium. It is commonly found to drop in men as they age. It is an independent risk factor for heart disease.
- **High levels of lipoproteins** are a significant risk for stroke

in men. These are proteins that bind to fat molecules and carry them from the intestinal blood stream where they are absorbed by the liver to become usable by the body.

## More Risk Factors

There are some other factors that contribute to heart disease. Some are environmental exposures, and others are lifestyle habits you should change, especially if you are already at increased risk for a heart attack.

- **Radiation exposure** oxidizes LDL and makes it stick to vessel walls. The children exposed in the Chernobyl nuclear accident had the highest levels of oxidized LDL.<sup>35</sup>
- **Chronic heavy metal exposure** to toxins like mercury and antimony can damage the heart muscles in certain individuals. Researchers from Rome, Italy found that congestive heart failure patients have 22,000 times more mercury and 12,000 times more antimony in their hearts compared to normal people.<sup>36</sup> With approximately 640 coal burning manufacturing plants in America, mercury waste absorbed by algae end up in fresh water and farm-raised fish.
- **Electromagnetic Frequencies (EMFs)** emitted by cell phones, televisions, microwave ovens and hair dryers are subtle and accumulative. There is real concern about EMFs as they apparently have an oscillatory similarity to certain electrochemical activities of the body and can disrupt cellular activity.<sup>37</sup>
- **Pesticides/Insecticides:** Organophosphates and carbamates are the more common active ingredients of household, garden and farm insecticides, and are highly toxic to all animals and humans. What do they do to the heart? In a 2004 study, 37 adults were admitted to a Singapore hospital with acute pesticide poisoning (organophosphates or carbamate) over a three-year period, and 62 percent of these patients later developed cardiac complications.<sup>38</sup> But just to give you an idea of how you can unknowingly encounter these chemicals, consider the work of



Theo Colborn, Ph.D., who found that the herbicide 2,4 D (the most widespread herbicide) was detected in 50 percent of semen samples from a group of Canadian men ages 20 to 59. He also found that the pesticide CPF was detected in 82 percent of urine samples tested. These are just two pesticides that were tested out of more than 1,400 known pesticides that have been developed! And you thought you were pretty safe from environmental toxins? They are quite likely contributors to the outrageous rates of heart attacks and cancers seen in young people each year.

- **Prescription medications:** Drugs used to treat heart disease, high cholesterol or high blood pressure can weaken the heart. These include Lipitor® and other statin drugs such as Mevacor®, Zocor®, Pravachol® and Crestor®. These are known to deplete an important energy-producing enzyme for the heart that you make naturally in your body called Coenzyme Q10 (CoQ10). Among others, Gemfibrozil (Lopid), used to lower triglycerides; Adriamycin, a chemotherapy drug; and the anti-hypertensive “beta blocker” medications are also known to weaken the heart and lower CoQ10 levels in your body.<sup>39</sup>

## **Foods that Increase Heart Attack Risk**

- **Refined sugar:** The average American consumes 22 teaspoons of added sugar per day according to U.S. Department of Agriculture estimates.<sup>40</sup> Sugar can increase systolic blood pressure, contribute to diabetes<sup>41</sup> and metabolic syndrome,<sup>42</sup> and as you learned earlier, sugar can cause atherosclerosis. High sugar in the blood also correlates strongly with peripheral vascular disease.<sup>43</sup>
- **Hydrogenated oils and trans fats** promote atherosclerosis even more than saturated (animal) fats do.<sup>44</sup> Several studies have clearly shown that trans fats are closely associated with heart attacks.<sup>45</sup> Take a guess what happens when you consume foods with high amounts of both refined sugar and refined oil. The adverse health effects are synergistic. In fact, high oil and high sugar foods stimulate an inflammatory response in the body. If you must eat them, it is best to eat them separately.

■ **High animal products and low plant fiber:** Heart disease rates begin to climb when animal protein consumption is above 10 percent of the diet, researchers of the China Study reported in their analysis of 130 villages in rural China.<sup>46</sup> There, animal protein intake was very low at only 1/10th of the U.S. average. Also, fat intake was less than half of that found in the U.S., and fiber intake was three times higher than in the U.S. The average cholesterol of the Chinese was only 127 mg/dL compared to 203 mg/dL on average for matched Americans. Researchers found the death rate to be 16.7-fold greater for U.S. men and 5.6-fold greater for U.S. women compared to their Chinese counterparts. The study found that heart attacks were far fewer among these rural Chinese than in the U.S.

With this information in mind, you can now appreciate that atherosclerosis is a multi-factorial process. The most important risk factors to heart disease statistically are smoking, high blood pressure, high cholesterol and diabetes. The most common medications prescribed for cardiovascular disease today are the statin drugs such as Lipitor®, Zocor®, Pravachol®, Mevacor® and Crestor®—often as the sole therapy to prevent and treat atherosclerosis.

Even cardiologists do not appreciate that most importantly there is an underlying systemic inflammation that causes arterial dysfunction. The true therapy must include addressing these other risk factors to atherosclerosis. Fortunately, you are becoming a health-conscious person who is willing to take responsibility for the health of your own arteries by correcting as many of the known risk factors as possible.

Yet, when a risk factor is found that can't be reversed through lifestyle interventions, nutritional supplements may help. For example, if your blood clots easily you will likely benefit from a natural clot dissolver such as vitamin E, nattokinase or ser-reptase. If you are chronically low in testosterone you will benefit from testosterone supplementation. And there are a myriad of nutrient supplements known to slow inflammation of atherosclerosis and the other underlying causes of endothelial damage. You will learn about these nutrients later in this book.

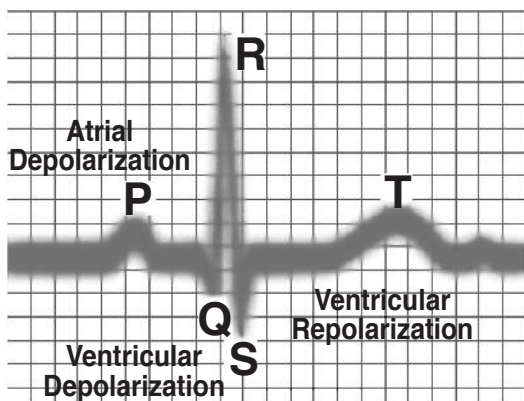
## Detection Tests for Cardiovascular Disease

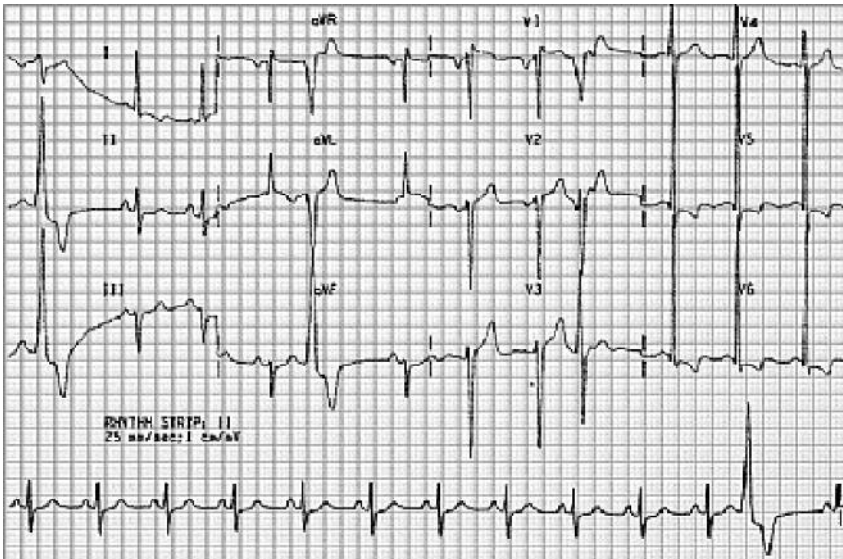
### Standard Chest X-ray (CXR)

A chest X-ray may be the most common and simplest imaging test of the heart. With this two-dimensional picture of the heart one can detect abnormal developments, outer heart contours and positioning of the heart in relationship to the other structures in the chest cavity. It is not possible to see anything wrong with the heart vessels themselves. However, other signs of heart failure can be detected from the status of the lung cavity findings. This occurs because a failing heart pushes blood pressure into the lung, which shows up on X-ray as excess fluid in the lung cavity. The heart also enlarges like a weak balloon. The vessels become displaced. There may even be calcified arteries in the heart. But all these findings are very late findings of a very sick person. Therefore, the chest X-ray does very little to diagnose atherosclerosis, before the disease is already known. However, it is helpful to monitor heart failure.

### Electrocardiogram (ECG)

The S-A node and the ripple effect of electricity throughout the heart muscles generate electrical waves with each pulsation. These electrical waves are detectable with wires attached to the chest skin. The ECG detects the voltage of the heart from multiple angles and pin-points which part of the heart may be lacking blood flow, or has already had damage from a heart attack. The ECG also reads the overall heart rhythm, heart rate and many other indicators of heart function. It will not show the valves, the muscle





<http://onexamination.com/MediaBrowser/Thumbs/T-1188.png>

wall action or the amount and exact location of occluded arteries from atherosclerosis.

The basic electrical information of each heart beat is revealed in the PQRST complex as shown on the previous page. But much more information is obtained when a 12-lead ECG is performed for approximately ten seconds as shown above.

## Cardiac Stress Tests

■ **Exercise Treadmill Test (ETT):** Continuous ECG monitoring while a patient exercises is known as a cardiac stress test, or exercise treadmill test. It detects mainly the health and blood flow capability of the left ventricle during physical exercise. It takes more than 75 percent occlusion of a major vessel in the heart to show up as an abnormality during stress testing. Abnormal results during exercise are such findings as new abnormal rhythms (arrhythmias), and chest pain correlating with ECG findings of lack of blood flow (ischemia), both of which are late findings of cardiovascular disease. It does not isolate an occluded vessel or heart muscle wall damage.

■ **Medication-driven stress tests:** Patients with abnormal resting ECGs or who have exercise limitations can be given an infusion of a medicine that simulates the effects of exercise on blood flow to the heart, instead of walking or running on a treadmill. Dipyridamole and adenosine are vasodilators that are commonly used for this. Dobutamine is used to stimulate the heart rate and the pumping force. When the vasodilator Dipyridamole is injected, it rapidly increases local blood flow by causing heart vessel dilation. This vasodilation occurs in healthy arteries, but diseased arteries remain narrowed. This creates a “steal” phenomenon in which the blood flow increases to the dilated healthy vessels and “stolen” from narrowed diseased arteries. A patient typically experiences symptoms of chest pain, and altered blood flow is detected by the ECG or echocardiogram.

### **Nuclear Perfusion Imaging**

■ **Sestamibi (Cardiolite)** scanning uses the radioactive isotope, technetium-99m (Tc99m), a nuclear medicine tracer molecule that can be used to assess heart muscle blood flow during stress testing. This molecule passes cell membranes and can show with a gamma camera areas where blood flow is plentiful and dark spots where it does not flow due to recent damage (infarction). The diagnostic accuracy is similar to thallium-201 (Tl-201). This has an accuracy equivalent to the dobutamine stress echocardiography for detecting residual infarct-related artery stenosis of greater than 50 percent and multi-vessel disease early after a heart attack.<sup>47</sup>

■ **Thallium-201 scanning** uses thallium-201 (Tl-201) injected into the blood stream during stress testing and it lights up (much like sestamibi) blood flow in the heart muscle using a gamma camera; areas lacking blood perfusion (the location of the myocardial infarction) stay dark.

### **Intima-Media Thickness (IMT)**

The tunica intima is the innermost layer of an artery where the endothelium of the artery develops atherosclerotic plaque. The

intima-media thickness (IMT) test is an external ultrasound of the inner lining of the carotid arteries in the neck to evaluate the regression and/or progression of atherosclerosis in the vessel wall. Many studies have documented the relation between the carotid intima-media thickness and the presence and severity of atherosclerosis in the coronary arteries of the heart. Therefore, this measurement is valuable for early detection and prevention of atherosclerosis. It focuses on the plaque rather than the narrowing of the lumen, which is seen on angiography.

### **Trans-thoracic Echocardiogram (TTE)**

An ultrasound of the heart is called an echocardiogram (ECHO). The TTE is performed by using a transducer over the skin of the chest wall to view the heart. With this video a cardiologist can then assess your heart valves, heart chambers, aorta and the degree of your heart muscle contraction. The amount of blood that is ejected with each heart beat is called the ejection fraction. A failing heart has an ejection fraction of less than 25 percent while a normal healthy heart has one of more than 55 percent. This test is somewhat limited by the ribs that are in front of the heart. It is also limited in patients with obesity, chronic obstructive pulmonary disease and chest wall deformities.

### **Trans-esophageal Echocardiogram (TEE)**

The trans-esophageal ECHO is done by passing a specialized probe containing an ultrasound transducer at its tip into the patient's esophagus and extending it right next to the heart. TEE gives a much improved picture over the trans-thoracic approach because it excludes the variables previously mentioned and allows closer visualization of common sites for infections, other abnormalities and prosthetic heart valves. TEE however, requires you to be fasting, requires a team of medical personnel, takes longer to perform and is uncomfortable. You need conscious sedation so you don't experience much, if any, pain or gagging.

### **Magnetic Resonance Imaging**

Magnetic Resonance Imaging (MRI) of the heart, sometimes known as cardiac MRI, is an optimized MRI for use in the cardiovascular system. These optimizations make heart structures

and other features of cardiovascular function easily assessed. One such enhancement to regular MRI imaging is to combine it with electrocardiogram (ECG) in order to view images at each stage of the cardiac cycle over several heart beats. Blood appears bright in these pictures in contrast to muscle images due to its rapid flow and imaging properties. Contrast agents can also be given to distinguish muscle scarring from normal heart muscle. An MRI can also detect coronary artery narrowing during stress, which appears as a transient perfusion defect.

**Coronary Artery Calcium Scoring**

Cardiac calcium scoring uses computed tomography to take thin section images of the calcium buildup in the plaque on the walls of coronary arteries. Because coronary arteries do not normally contain calcium, any calcium detected with this test is a sign of coronary artery disease (CAD). This test is only performed if you have a moderate level of risk factors for CAD so you can have a quantitative measurement of the calcium build-up. But like any test, there are false-positive results, meaning that it can show plaque in your coronary arteries even if you do not have CAD.

A radiologist interprets the results and assesses your current and future expected risk of having a heart attack. This means that with a score of zero you have no evidence of plaque, and are very unlikely to develop atherosclerosis or experience a heart attack for the next five years. As evidence of plaque increases so does your likelihood of having a heart attack. The scoring system includes:

**Cardiac Computed Tomography Angiography**

Calcium Score	Presence of Plaque
0	No evidence of plaque, risk low X 5 yrs more
1-10	Minimal evidence of plaque, symptoms or not
11-100	Mild evidence of plaque
101-400	Moderate evidence of plaque
Over 400	Extensive evidence of plaque





Multi-slice CT Scanner

[http://en.wikipedia.org/wiki/Image:64\\_slice\\_scanner.JPG](http://en.wikipedia.org/wiki/Image:64_slice_scanner.JPG)

There are at least 13 different computed tomography categories. I'll focus on the ones that apply to imaging the heart. Cardiac CT angiography (CTA) is computed tomography that creates high resolution images of the heart and the coronary arteries. Pictures are taken rapidly—faster than one image per second—with spiral CT using slices close together. The value of using this technique is to rule out coronary artery disease. This is because a negative test result means that a patient is very unlikely to have coronary artery disease as the cause for symptoms. Manufacturers have developed a 256-slice scanner and even a 320-slice scanner (Toshiba), which are both upgrades from the standard 64-slice scanners.

The safety drawback to this technique is that there is more radiation exposure than either CT or angiography alone. In fact, cardiac CTA gives the equivalent radiation exposure of between 100 and 600 X-rays of the chest.



## Coronary Angiography

An angiogram is an imaging technique using X-ray pictures that visualize the inner opening (or lumen) of coronary arteries. Angiograms can also be done on arteries of the brain to detect narrowing (stenosis), bulging (such an aneurysm) or arteriovenous malformations. The contrast material is introduced via a catheter inserted in the femoral artery (near the groin), passed into the heart and then maneuvered into a coronary artery under moving X-ray guidance called fluoroscopy. When the catheter tip is in place, the contrast dye is injected to give a short but visible shadow of the space it fills inside the vessel. It is seen as a moving picture as the heart beats, and interpretation of the image can be a bit tricky. Atherosclerosis will not be seen directly but is presumed with severe narrowing of an artery. This test gives definitive information and can be enough for a cardiothoracic surgeon to decide to do open heart surgery. See the image on the next page.



3-Dimensional Spiral CT Scan of the carotid artery atherosclerosis  
([http://www.nutritionreview.org/images/feb2005\\_report\\_sesame\\_08.jpg](http://www.nutritionreview.org/images/feb2005_report_sesame_08.jpg))

## Cardiac Markers of Heart Muscle Damage

When you go to an emergency room for evaluation of chest pain, there will be several vials of blood taken from you immediately. This may even occur before they hook you to the chest leads of an electrocardiogram (ECG). The tests check for:

- **Troponin:** This is a complex protein found in skeletal and cardiac muscle, but not smooth muscle. The level of troponin usually rises within four hours of the onset of anginal chest pain and even before permanent damage is done to the heart.



Angiogram showing the left coronary circulation  
<http://en.wikipedia.org/wiki/Angiography>

- **Creatinine Kinase:** The heart muscle also secretes a component of the enzyme creatinine kinase called CK-MB, which is unique to cardiac muscle. During injury, CK-MB is detectable and corresponds with myocardial tissue damage with even more accuracy than troponin, starting at about six hours after the start of a heart attack.<sup>48</sup>
- **SGOT:** (Serum glutamic oxaloacetic transaminase), formerly known as **AST** (aspartate transaminase) and **LDH** (lactate dehydrogenase), are enzymes that are elevated in myocardial muscle damage beginning at 12 hours post-injury and remaining elevated for a few days. These measures are not as useful as the CK-MB and troponin levels.
- **Myoglobin:** Myoglobin is also a molecule released from damaged muscle tissue. It is not widely used anymore as a marker of myocardial muscle damage because of the newer, better tests named above.
- **BNP:** This blood test is for diagnosing heart failure. It measures the beta natriuretic peptide (BNP). This is a protein produced by your heart and blood vessels. BNP acts as a natural diuretic to

eliminate fluid. When your heart gets damaged your body secretes very high levels of BNP in order to take the fluid burden off the heart as a natural reflex protection mechanism.

The diagnosis of myocardial infarction (MI) requires two out of the following three components: 1) History of pains consistent with a heart attack, 2) the electrocardiogram showing clear evidence of ischemia or even infarction and 3) an elevation of the cardiac markers on blood testing. During a heart attack, blood levels of cardiac markers rise over time, which is why patients are often admitted to the hospital for 24-hour observation to be on the safe side of management while the blood tests are taken and ECGs are recorded.

## **Risk Factors for Stroke**

Risk factors for stroke are not necessarily the same for atherosclerosis and heart attack. The ones that are the same include:

- Advancing age
- High blood pressure
- Diabetes Mellitus
- High cholesterol
- Smoking

The risk factors that are unique to stroke are:

- Transient ischemic attack (TIA): Stroke symptoms that resolve within 24 hours
- Atrial fibrillation, which allows blood to clot in the heart and then embolize
- Migraine headaches
- Easy blood clotting



Normal CT scan of the head; this slice shows (bottom to top): the cerebellum, a small portion of each temporal lobe, the eye and the central ethmoid sinuses.  
[http://en.wikipedia.org/wiki/Image:Head\\_CT\\_scan.jpg](http://en.wikipedia.org/wiki/Image:Head_CT_scan.jpg)



3 Tesla Clinical MRI Scanner

[http://en.wikipedia.org/wiki/Magnetic\\_resonance\\_imaging](http://en.wikipedia.org/wiki/Magnetic_resonance_imaging)

## Diagnosis and Follow-Up Testing for Stroke

Making the diagnosis for a stroke is simpler than making the diagnosis for a heart attack. When there is any kind of sudden neurological change that is evident, a CT scan of the head is done rapidly at the time of an emergency room visit. But a CT scan often misses a stroke, especially in the first three days after brain tissue injury, unless it is from a large bleed in the brain. When due to a bleed, CT will pick it up 86 percent of the time.

If the CT scan does not show bleeding, but symptoms are clearly consistent with a stroke, then an MRI or even a cerebral arteriography can be done to look closer at small areas of brain damage from stroke. Neurological examination is the best way to evaluate ongoing or repeat stroke. The MRI is the best imaging test as well, but is usually not needed once the type of stroke is established. At that point the focus is on treating and preventing the problem.



## CHAPTER 3

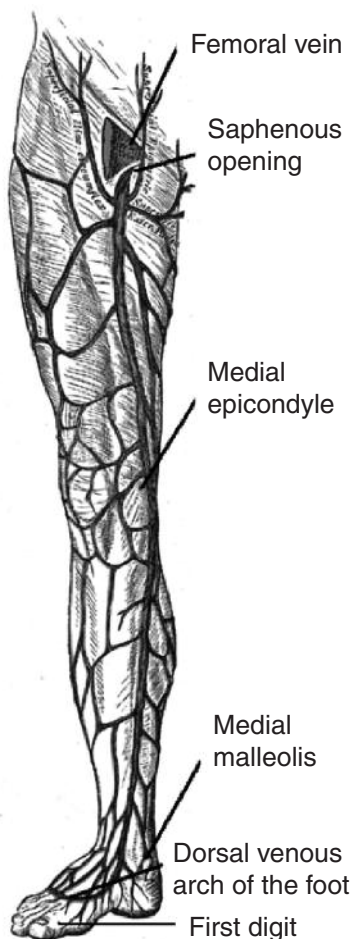
## Medical Interventions for Cardiovascular Disease

Once there are known risk factors, signs or symptoms of cardiovascular disease, then treatment is always the next consideration. Prescribing a pharmaceutical drug is the first choice by conventional medicine doctors today. Let me outline the conventional medicinal approach to treating cardiovascular accidents and long-term management of the disease.

Medical management of cardiovascular disease in America stems from the misconception that high cholesterol and dietary fats are to blame for the disease. The approach is to recommend reducing dietary fat consumption in order to lower cholesterol and to also hopefully lower triglycerides and low-density lipoprotein (LDL) cholesterol in the blood. The reality, however, is that patients are not taught how this is effectively done. As a result, the focus nearly always becomes a prescription for a statin drug to lower blood cholesterol. This may be accompanied by antihypertensive drugs and sometimes antithrombotic drugs. Rarely does a patient get practical hands-on training on how to choose nutrient-rich, whole foods and other lifestyle interventions which actually have been proven to reverse atherosclerosis. Do doctors know that nearly half of all heart attack victims have completely normal cholesterol levels?

Taking this conventional medicine approach further, when the use of cholesterol-lowering medications does not prevent a heart attack or the chest pains that precede one (angina), then a surgical intervention is automatically sought. For more than 35 years the standard treatment for significant coronary atherosclerosis has

been open heart bypass graft surgery. Recuperation from this highly invasive procedure can take months, and some patients suffer lifetime impairments such as memory loss, chronic inflammation and depression. The death rate from open heart surgery is approximately 3 percent. Included in this statistic are the elderly and very high risk patients.



Another surgical approach is coronary artery angioplasty with or without stenting. Once discovered on an angiogram, these stenotic (narrowed) artery segments can be expanded mechanically. Then after opening them, the interventional cardiologist can place a stent (like a flexible short straw) which maintains the opening there. There are other safe and effective interventions such as EDTA chelation and nutritional therapy.

### **Coronary Artery Bypass Graft (CABG) Surgery and Angioplasty**

Open heart surgery is one commonly performed method to bypass atherosclerotic arteries. It has become the standard of care for patients with uncontrolled angina or those at high risk for a first or subsequent myocardial infarction. The first successful surgery was performed at the Cleveland Clinic Foundation in 1967 and it did not take long for this expensive, high-tech surgery to become a huge business, despite the lack of



<http://www.diagnosisheart.com/images/robot3.jpg>

well-designed clinical trials to prove its benefits. In fact, it has been estimated that up to 30 percent of these surgeries are performed on patients who do not fit the standardized surgical criteria. Such patients are enrolled into surgery by eager surgeons who do not give favorable consideration to the alternatives to surgery to treat heart disease. Originally the procedure was done on relatively younger and healthier candidates, with a death rate from surgery at 1 to 2 percent. With older patients being encouraged to have this surgery, mortality rates have increased to 4 to 8 percent in older patients or those who have had a prior CABG operation. In 2005, according to the American Heart Association, there were 325,000 CABG surgeries performed on men and 145,000 on women.

This surgery often involves first harvesting the vessel to be used as the graft and then putting the heart on bypass so the diseased section of artery can be removed and replaced by the healthy graft. The graft vessel section is usually taken from the large saphenous vein that runs down the inside of the lower extremity.

Alternatively, the internal thoracic artery (or the internal mammary artery) is another option as a graft. This is located under the chest wall.



During the CABG operation, your heart is sometimes stopped while your body is pumped with warm oxygenated blood from a heart-lung bypass machine. Then the intricate work of replacing the vessel graft is done in about 30 minutes. The entire operation is a two-to four-hour process. Many patients need multiple blockages repaired and therefore undergo multi-vessel bypass.

Since the early 1990s there has also been growing success with the off-pump bypass surgery. In this case the heart is stabilized to provide a nearly still area to work on while allowing the heart to beat. This has been found to give better overall results with fewer post-operative complications, yet studies are still not definitive about its advantages.

A problem with a surgical approach is that patients often do little to change their unhealthy lifestyle that promoted the atherosclerosis in the first place. Therefore, many patients return for a second and even third open heart surgery.

### **Robotic Surgery**

Most recently there has been a new kind of CABG called the robotically-assisted endoscopic coronary artery bypass surgery. In this surgery, a heart surgeon uses a machine to make three small incisions just large enough for the robotic tools to pass through.

The chief advantages of robotic surgery is that tiny incisions are made instead of cracking the chest wide open for several hands to operate together on the heart. Therefore, the recovery time is much quicker with robotic surgery—only two to four weeks instead of the four to six months with open heart CABG surgery. Also, it is less expensive to perform per patient. However, it is not widely available because it is new technology and the robotic machinery costs more than \$1 million. Other disadvantages of robotic heart surgery are that since it is new, the efficacy and safety are not yet fully known.

### **Angioplasty**

Angioplasty involves inserting a catheter with a strong but tiny balloon through the groin artery up into the heart. The balloon is inflated

to crush the plaque deposits on the inside of an arterial wall. This is usually followed by the implantation of a tiny rigid mesh tube (stent) to keep the arteries open. Researchers at Harvard Medical School reported that interventional cardiologists find it far too easy to overestimate artery narrowing on an angiogram in order to justify performing angioplasty on their patients. They examined 543 angioplasties performed on Medicare beneficiaries and discovered that only about one third of the patients could have expected to really benefit from the procedure, and that 30 percent of the angioplasties were completely inappropriate according to established guidelines.<sup>49</sup> In 2005 there were 874,000 men and 397,000 women who underwent angioplasty procedures. Because atherosclerosis will tend to form in the vessels again, the failure rate for stent placement is estimated at 10 to 15 percent.

This limited view of total reliance on the medical system to fix cardiovascular disease is costing the nation a bundle of money, and doing very little in reversing this disease. The system seems to feed itself with ever more candidates for open heart surgery and angioplasty, both of which are very expensive procedures. A review of surgical costs showed angioplasty of one vessel to cost more than \$21,000, including aftercare costs. One vessel bypass graft surgery was more than \$32,000.<sup>50</sup>

## **Cholesterol-Lowering Drugs and The Role of Lowering Cholesterol**

Treating cholesterol with medications is the first and easiest therapy recommended by doctors. The statin drug atorvastatin (Lipitor®) is the most commonly prescribed drug of all prescription medications available in the U.S. Others in this category are pravastatin (Pravachol®), simvastatin (Zocor®), lovastatin (Mevacor®) and rosuvastatin calcium (Crestor®). Vytorin® is a pill containing ezetimibe (Zetia®) and simvastatin. Ezetimibe works by blocking the amount of cholesterol your body absorbs from your diet. It is more effective than Lipitor® or Zocor® alone.

Another family of LDL cholesterol-lowering drugs are the bile acid sequestrants. These include cholestyramine (Locholest®, Questran®) and colestipol (Colestid®). Other drugs used to lower

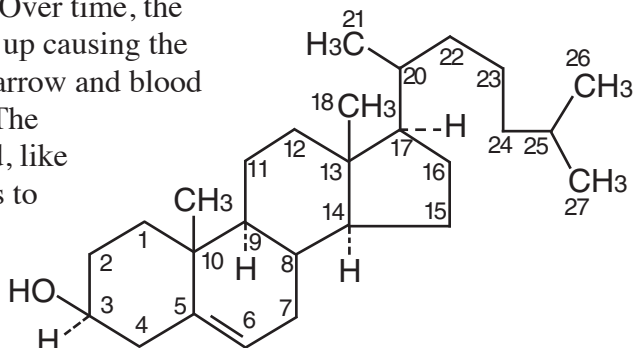
cholesterol include gemfibrozil (Lopid®), clofibrate (Atromid-S) and probucol (Lorelco). While these drugs are well accepted, they may not be the best way to reduce disease.

### What is Cholesterol?

Is cholesterol a villain or a hero? The science department at the University of California at San Diego<sup>51</sup> describes it: “Cholesterol is a fatty substance produced by every cell in the body that is vital for health. It is a necessary component of all cell membranes. It is the precursor to all steroid hormones (including estrogen, testosterone, cortisol, and vitamin D). It is the leading organic molecule in the brain and is needed for brain function. Blood cholesterol carries antioxidant vitamins to the tissue. The majority of cholesterol in the blood is produced by the liver.”

While that tells the virtues of cholesterol, here is a definition by the National Institutes of Health,<sup>52</sup> which of course focuses on the harmful aspect of cholesterol: “A fat-like substance that is made by the body and is found naturally in animal foods such as meat, fish, poultry, eggs and dairy products. Foods high in cholesterol include liver and organ meats, egg yolks and dairy fats. Cholesterol is carried in the blood. When cholesterol levels are too high, some of the cholesterol is deposited on the walls of the blood vessels. Over time, the deposits can build up causing the blood vessels to narrow and blood flow to decrease. The cholesterol in food, like saturated fat, tends to raise blood cholesterol.”

Cholesterol is a molecule that develops into many hormones and



### Cholesterol Molecule

<http://www.scientificpsychic.com/fitness/cholesterol.gif>

enzymes in the body. It also makes up the inner layers of the cell membrane of your 70 trillion body cells. Cholesterol is important, as long as it isn't too prevalent or especially electrically charged (oxidized), at which point it gets involved in the process of atherosclerosis as described earlier in this book. To a chemist it looks like carbon molecules (at the point of each hexagon or pentagon) in the form of sugar chains hooked together.

Total cholesterol is measured and followed as part of “preventive medicine” measures. It is one of several indicators of cardiovascular health status. The normal cholesterol in America is below 200 mg/dl. If your cholesterol goes above 240, your risk of heart disease goes up statistically. But did you know that your risk is already up with a total cholesterol of 180 mg/dl?

Consider a report of rural China's animal protein intake and corresponding cholesterol levels. In this study, the Chinese subjects had a very low animal protein intake—at only 1/10th that of the U.S. average; their fat intake was less than half of that found in the U.S.; and their fiber intake from green vegetables was three times higher than in the U.S. Correspondingly, the average cholesterol level of the Chinese was only 127 mg/dL compared to 203 mg/dL level in the U.S.! The researchers went on to reveal that these Chinese had a death rate 16.7 TIMES lower than their U.S. male counterparts and 5.6 TIMES lower than their U.S. female counterparts!<sup>53</sup> What does this tell you about the optimal cholesterol level for your health?

## **LDL Cholesterol**

Low-density lipoprotein (LDL) cholesterol becomes sticky when it oxidizes and loses an electron. Too much LDL can be a problem. But too little cholesterol is also a problem. Our sex hormones and brain tissue depend on cholesterol as the substrate molecule. The key is to have enough cholesterol without the associated inflammatory chemicals that produce heart disease. It's really that simple.

## **HDL**

We can call HDL cholesterol “good,” because it is the cholesterol that is being swept up off our arteries from plaque and dumped out

through our excretory system, mostly the liver. Therefore, we like the HDL fraction to be as high as it can go. Since there seems to be an upper limit for HDL of about 60 for men and about 80 for women, we look at the ratio of total cholesterol to HDL cholesterol to ascertain cardiovascular health.

## **Triglycerides**

Triglycerides are a kind of fat that comes from foods and is carried through the bloodstream to fat tissues. However, high blood triglyceride levels alone do not cause atherosclerosis. It is just that high triglycerides are associated with high cholesterol states (not causative) and may be a sign of a lipoprotein problem that contributes to heart disease. Triglycerides often increase dramatically with sugar consumption and measurements are highly variable.

## **How did Cholesterol Become so Important, Anyway?**

Cholesterol is a major component in arterial plaque. Plus, we observe that people with high cholesterol more often experience a heart attack than people with normal or low cholesterol. Yet, in my clinical practice I find that the other factors play a huge role in heart disease risk.

For example, along with stress levels come lifestyles that lend to inflammation and other risk factors to heart disease. Reading a comprehensive review of cited literature<sup>54</sup> and the history of how the lipid-lowering drugs made their way into mainstream science is fascinating to me. Let me share some of it with you.

In 1936, pathologist Dr. Kurt Landé and biochemist Dr. Warren Sperry at the Department of Forensic Medicine of New York University first studied atherosclerosis as it correlated with cholesterol levels in individuals who had died violently. To their surprise, they found absolutely no correlation between blood cholesterol levels and the degree of atherosclerosis in their arteries.<sup>55</sup>

Then, Dr. J. C. Paterson from London, Canada and his team followed about 800 war veterans for many years. They also found that those with low cholesterol had just as much atherosclerosis

when they died as those who had high cholesterol.<sup>56</sup> Similar studies have been performed in India,<sup>57</sup> Poland,<sup>58</sup> Guatemala<sup>59</sup> and in the U.S.,<sup>60</sup> all showing no correlation between cholesterol in blood and the amount of atherosclerosis in the vessels.

It wasn't until the famous study conducted in Framingham, MA,<sup>61</sup> that a correlation was found, albeit minimal. The Framingham Study showed many other important relationships to heart disease, but this autopsy study is what gave lipid-lowering pills so much power. Their correlation coefficient was only 0.36, which is low in statistical terms and indicates a weak relationship between cholesterol and atherosclerosis. The real juicy part of the story, as told by Dr. Uffe Ravnskov, is that Dr. Manning Feinleib of the National Heart, Lung, and Blood Institute and his coworkers who studied the coronary vessels of those who had died, only examined 281 of the 914 dead individuals. Then from the 281, they selected just 127 (14 percent of all dead) who became the subjects of their autopsy study!

What I get from this is that with only 14 percent of the Framingham deceased chosen for autopsy, study biases must have been huge because of a condition that is known to cause heart attack death at an early age called familial hypercholesterolemia. This rare disease must have been present in the study subjects, given that they were all located in the same vicinity. Do you see how this could greatly pad their results to get the relation they were looking for if they used a subgroup with this condition in it? The point is that ever since the Framingham Study results, the statin companies have been able to keep this belief going that we must have a pill to lower our cholesterol in order to lower our atherosclerosis and heart attack rate. What I have found is that behind it all, there really is little to substantiate that cholesterol is the *cause* of atherosclerosis! This deserves the quote from Mark Twain: "There is something fascinating about science. One gets such a wholesale return of conjecture for such a trifling investment of fact."

It is always eye opening to realize how much control prescription medications can have on the American public. In

2004 a trial hit the news that was way over promoted. Called the PROVE-IT trial,<sup>62</sup> investigators took 4,162 patients, just after having a heart attack, and compared the results of Pravachol® with Lipitor®. While Lipitor® had a 32 percent greater reduction in LDL cholesterol compared to Pravacol®, the absolute reduction in the death rate was 1 percent better, a decrease from 3.2 percent to 2.2 percent during the two-year study. And, Lipitor® just so happens to have the highest dollar volume of sales of any prescription drug in the country—approaching a projected \$10 billion annually for 2005!

As Dr. Ravnskov points out,<sup>63</sup> about 165 healthy people would also have to be treated for five years in order to extend one life by five years. And by using statins to do it, the cost for that one life totals between \$750,000 and \$1.2 million dollars. Certainly there are less costly and safer ways.

## **Blood Pressure-Lowering Drugs**

Your heart beats more than 100,000 times each day and pumps 2,000 gallons of blood through your blood vessels to feed every tissue and organ in your body. You would think that the force of blood against the vessel wall over time would wear it down. Atherosclerosis is the mechanism to toughen up the vessel—but it also causes a narrowing of the tiny arteries over time so that less blood can feed the tissue with nutrients and oxygen. By the time we are elderly the death rate increases linearly as systolic blood pressure increases.

Pills to lower blood pressure make up the largest category of prescribed medications in the U.S. today. High blood pressure is a direct cause of heart attack, stroke, congestive heart failure, kidney failure, peripheral blood vessel disease, dementia, blindness and just about every illness involving soft tissues in the body. Treating this condition is immensely important because it is estimated that for each 20 mmHg increase in your systolic pressure you double your risk of a heart attack, beginning at 120 mmHg!

The main categories of prescription drugs designed to lower blood pressure include beta blockers, ACE inhibitors, angiotensin II receptor blockers, calcium channel blockers, diuretics and alpha blockers. Indeed, keeping blood pressure in normal range is a valuable treatment, yet the use of these medications are not as profound as you would think given the tremendous cost and attention given to them.

First, there are the ACE-inhibitors (angiotensin converting enzyme-inhibitor) and the ARBs (angiotensin receptor blocker), which are the safest and most effective ones to take when you don't have existing heart disease. These are the medications such as Lisinopril,<sup>®</sup> Enalapril,<sup>®</sup> Cozaar<sup>®</sup> and Atacand<sup>®</sup>. They work by lowering the hormone aldosterone, thereby signaling blood vessel relaxation, relaxation of the heart's beat, lowered blood volume and other mechanisms to lower pressure.<sup>64</sup> Adverse side effects are fewer with these two classes of medications than the other anti-hypertensive meds.

If you have suffered a heart attack or stroke the safest and most effective prescription medications for preventing a recurrent event are the beta-blockers like metoprolol or atenolol. These prescription medications act primarily to slow the heart and lower the power of each heart beat, thereby lowering pressure throughout the blood vessels. They often make patients fatigued, depressed or dizzy (when they stand up too quickly).

There are also diuretics like hydrochlorothiazide (HCTZ) that are often prescribed to lower blood pressure by reducing total body fluids. As excess water retention is reduced, less fluid sits inside the blood vessels.

Another useful class of medications used to lower blood pressure are calcium channel blockers, the classics being nifedipine, diltiazem and verapamil. They relax the smooth muscle of the blood vessel wall so that pressure inside the vessel drops. There are increased side effects with these. They are also the most expensive of the prescription medications overall, just ahead of the ACE-inhibitors and the ARBs.<sup>65</sup>



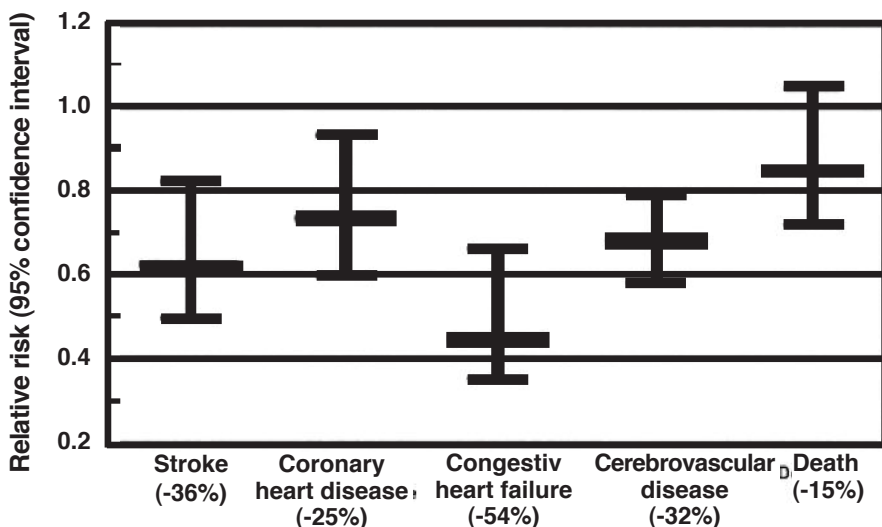
As I alluded to earlier, keeping blood pressure in normal range with prescription medications is not really very impressive given the tremendous cost and attention we give to them.

A summary of previous major randomized, prospective, placebo-controlled treatment trials was reviewed in the March 1999 *American Family Physician*. The effects of prescription medications were revealed for five major categories of cardiovascular disease. Reductions in disease outcomes using prescription medication were significant. These were measured as reductions from normal (untreated groups). Yet, when we consider the effect of placebo, which is the power of the mind to lower blood pressure using inactive pills, the reduction in blood pressure with placebo was even greater than the isolated effect of medication. Therefore, the actual lowering of blood pressure from the medication was less than the blood pressure lowering effect of the mind over the body. See the graph on the following page.

To illustrate further, there has been a summary of study outcomes looking at eight randomized, controlled treatment trials. These trials followed 20,000 elderly patients with high blood pressure who were using diuretics or beta blockers. The mean age of the group was 70 years old, and they were followed for 2.5 to 5 years.<sup>66, 67, 68, 69, 70, 71, 72, 73</sup> Surprisingly, blood pressure reductions were only 13 mmHg systolic and 6 mmHg diastolic! Compare this to the reductions in blood pressure through natural therapies and lifestyle changes you'll read about in this book.

## **Hormone Replacement and Heart Disease in Women**

For many years I, along with my colleagues around the world, prescribed synthetic hormone replacement therapy to more than 50 million women to reduce the risk of heart disease in menopausal women. This errant information that we were being fed by pharmaceutical company data was exposed as fraudulent in 2002 from the large Women's Health Initiative Study. Researchers found definitive evidence that women taking conventional hormone replacement therapy were actually at a higher risk for heart disease, stroke and breast cancer than other



**Comparative reductions in cardiovascular events:** For each disease category, the percentage of reduction experienced by treated patients is compared with patients who received placebo. While considered “significant” reductions by proponents of conventional medicine, you’ll find comparable or greater reductions using natural therapies. Average blood pressure was 171/77 mmHg at baseline in the treated group and 170/76 mmHg in the placebo group. Average blood pressure was 144/68 mmHg after treatment in the treated group and 155/71 mmHg in the placebo group. Thus, average blood pressure was only 12/4 mmHg lower in the treated groups compared to placebo groups. Notice that even placebo groups had a significant reduction in blood pressure. In fact, there was a greater effect of their mind on lowering their blood pressure than the isolated effect of the medication itself (<http://www.aafp.org/aafp/990301ap/1248.html>).

women not taking the hormones. Since then, few women take these hormones for menopausal symptoms. Many have found successful treatment of menopausal symptoms using the safer, bio-identical hormones estrogen and progesterone rather than the ones from pregnant mare urine (Premarin®) and the synthetic progesterone.

## Anti-thrombotic Drugs And Stroke Treatment

When a person discovers a neurological (stroke-related) abnormality it is wise to get to the emergency room ASAP. Why? Because the

diagnosis must be made so that correct treatment can be administered, which must be done within three hours if you are going to stop

a permanent stroke from occurring. In the case of a CT scan showing no evidence of bleeding, then clot buster medicines (thrombolytics such as t-PA, streptokinase and urokinase) are infused to get the best chances for recovery. This usually does not happen simply because of ignorance among lay people.

The next best thing after a stroke is to prevent the next one from occurring. When drugs are used to prevent a second or subsequent stroke we call this secondary prevention. This is done by taking blood thinning medications every day such as the anti-platelet drugs aspirin, ticlopidine (Ticlid®), clopidogrel (Plavix®) and dipyridamole (Aggrenox®). Pentoxifylline (Trental®) is another blood thinning medication used to treat lower extremity claudication and vascular dementia. During angiography and other clot-promoting procedures, the glycoprotein IIa/IIIb inhibitors are used. Abciximab (ReoPro®) is an example. It has a short plasma half-life because it attaches to platelets, which return to normal within 24 to 48 hours after discontinuing the drug. The most potent and effective (but also with the highest risk of dangerous bleeding) is warfarin (Coumadin®). This is used for patients with atrial fibrillation to prevent thrombus and subsequent stroke due to the stagnation of blood flow in the fibrillating heart chamber. It is also used if a heart valve has been replaced or if the patient is known to have increased clotting.

## CHAPTER 4

## Alternative and Natural Interventions for Cardiovascular Disease

### Primary Prevention Strategies and Lifestyle

**P**rimarily prevention is defined as doing things to keep the underlying causes of disease from developing. An accurate depiction of what has generally been happening with primary prevention in the U.S. is stated by the authors of *Death by Medicine*: “U.S. health care spending reached \$1.6 trillion in 2003, representing 14 percent of the nation’s gross national product. Considering this enormous expenditure, we should have the best medicine in the world. We should be preventing and reversing disease, and doing minimal



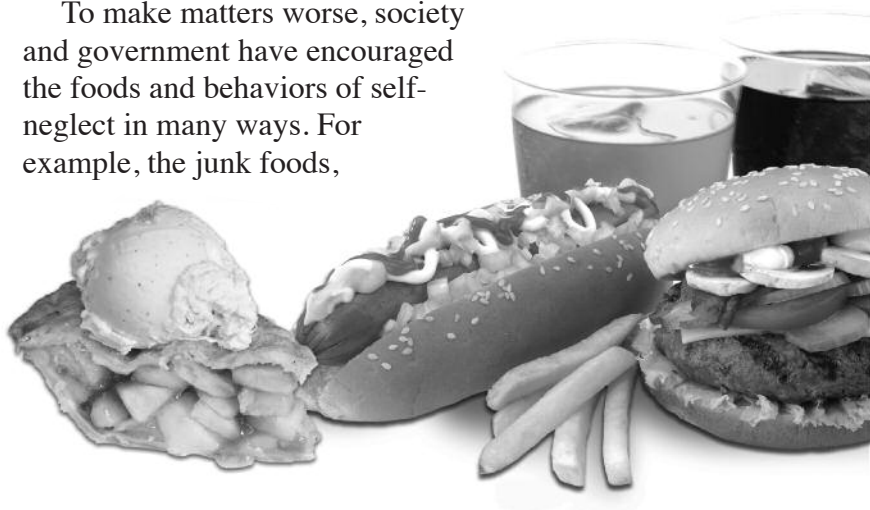
Are you eating properly and getting plenty of exercise?

harm. Careful and objective review, however, shows we are doing the opposite. Because of the extraordinarily narrow, technologically driven context in which contemporary medicine examines the human condition, we are completely missing the larger picture. Medicine is not taking into consideration the following critically important aspects of a

healthy human organism: (a) Stress and how it adversely affects the immune system and life processes; (b) insufficient exercise; (c) excessive caloric intake; (d) highly processed and denatured foods grown in denatured and chemically damaged soil; and (e) exposure to tens-of-thousands of environmental toxins. Instead of minimizing these disease-causing factors, we cause more illness through medical technology, diagnostic testing, overuse of medical and surgical procedures, and overuse of pharmaceutical drugs. The huge disservice of this therapeutic strategy is the result of little effort or money being spent on preventing disease.”<sup>74</sup>

Just to pick on the current medical system further, my experience in my role as a conventional medicine doctor was also not encouraging. As I visited the patients I admitted to the hospital I remember vividly the nutrient-poor foods they received there. All patients received typical cafeteria food with all sorts of refined sugars and refined oil—hardly the diet to assist in healing their illness. Then they were sent home with no real knowledge of the kinds of foods that restore health (nutrient-rich, whole foods). In fact, we tell them to take their medications and hope for the best recovery. Unfortunately, this type of poor food education permeates our hospitals, our public schools and most all of our households in America.

To make matters worse, society and government have encouraged the foods and behaviors of self-neglect in many ways. For example, the junk foods,



fast foods and other disease-promoting behaviors are all around us with no change in sight.

It is time for an overhaul in our educational systems when it comes to teaching health. The very words “primary prevention” imply the reduction of risk factors by public health measures, such as reducing smoking and the other behaviors that increase risk of disease development. It will become self-evident what these measures are as you continue reading.

Secondary prevention refers to actions like taking medication that reduce the risk in those who already have a disease. It also refers to screening and monitoring disease progression (a standard of conventional medicine). Tertiary prevention is taking actions to reduce the risk of repeated events or complications, such as stopping another stroke or heart attack in someone who has had one already.

Therefore, when you see lists of risk factors for heart attack or stroke, think of what it takes to prevent the disease from developing further or reverse the disease process. The risk factors of hypertension, heart disease, diabetes, cigarette smoking, high cholesterol, stress and many others can all be eliminated. Even your genetic predisposition for disease expression gets reduced dramatically by a healthy lifestyle.

## **Nutrition as Medicine**

Dozens of clinical studies have shown that optimizing nutrition and reducing stress slows and even reverses atherosclerosis. In other words, reversing or slowing endothelial dysfunction must be the cornerstone of therapy. One study that is quite impressive reported the following:

- The intervention group ate: Plant foods such as fruits, vegetables, legumes and grains without quantity restriction; less than 10 percent fat; and only limited egg whites, non-fat milk and yogurt. Stress-reduction and needed behavioral modification was also applied during this year-long study period.

- The control group followed the usual dietary recommendations for heart disease patients: Cutting out butter; largely eating chicken or fish instead of beef, reducing fat intake from 40 to 30 percent of the diet, reducing cholesterol to less than 200 mg per day, exercising and no more smoking.
- Researchers found reversal of coronary artery atherosclerosis in 82 percent of the intervention group after one year as verified by initial and follow-up angiography. This statistic included old and young alike, no matter how advanced their atherosclerosis!
- In contrast to the intervention group, the majority of the control group patients had a worsening of atherosclerosis at one year.

The extent of dietary change in these study subjects far exceeded what typical recommendations are given to patients after a cardiac event at hospitals today. Further in this book you will see how dietary interventions play a huge role in preventing and treating cardiovascular disease and its causes.

Remember the phrase attributed to Hippocrates, the Father of Medicine: *“Let your food be your medicine and your medicine be your food.”*

## Lowering Blood Pressure Naturally

Did you know that in numerous countries where diets are low in fat, low in animal protein and high in fiber and fresh produce, that hypertension does not even exist? According to a 1980 article in *The Lancet*, gaining weight and a more refined diet were shown to correlate with the rise in arterial pressure when tribal South Africans moved to urban areas.<sup>75</sup>

When liquid cleansing for one to two weeks is then followed by reintroducing nutrient-rich, whole foods, the effect is quite dramatic. I had a patient who taught me this a few years ago. She suffered with fluid retention, headaches, rash, achy joints, low energy and low self esteem. She decided to go on the Lemonade Cleanse for 30 days. She returned to excitedly tell me and the office staff that she had lost 30 pounds, regained her energy and her self confidence. Her headaches almost vanished, her joint pains were gone and her rash was resolving. She did

not experience hunger while on the liquid cleanse. The exact instructions for the Lemonade Cleanse are given below.

### **The Lemonade Cleanse for Three to Ten Days**

The lemonade diet consists of fresh squeezed lime or lemon juice, grade B maple syrup and cayenne pepper mixed with water. An herbal laxative tea is taken twice a day, and no solid food is eaten during the entire three to ten days. This regimen can be followed for ten days or may be safely extended for 40 days, depending upon your physical condition. Expect to experience the symptoms of sweating, increased urination, diarrhea or decreased bowel movement, mild weakness and even a change in breath odor.

#### **What You Need Before Starting:**

- Grade B maple syrup (do not use grade A or “pancake” maple syrup!)
- Large bag of fresh lemons or limes (do not use juice from concentrate)
- Cayenne spice you may already have in the kitchen
- Six water bottles so you can prepare several at once and store in the refrigerator for up to six hours

#### **Directions:**

Mix into one 16-ounce water bottle the following ingredients to your desired taste:

- Purified water: Nearly fill up bottle
- Juice from one fresh squeezed lemon or lime
- Grade B maple syrup: Just a quick pour at first and increase to desired taste
- Cayenne pepper: Begin with only a pinch and increase or decrease according to flavor. Higher cayenne amounts stimulate more cleansing.

On the second and succeeding bottles, experiment with more or less citrus juice, more or less maple syrup and more or less cayenne. For lunch or dinner consider hot water (like a soup broth) with increased cayenne to get a powerful spice taste. Drink six to 13



of these full bottles per day. Remember, this is your food and your drink for the day. You will find that your hunger will decrease substantially after the third day.

**Powdered Whey Drink:** Two heaping teaspoons in eight ounces hot water. Add natural sweetener and a dash of soymilk, rice milk or almond milk, but keep warm to hot. Drink any time you feel hungry, weak or faint. Drink it a minimum of twice daily if you experience loose stools or diarrhea.

**Herbal Laxative Drink:** Morning and evening herbal laxative teas are filling, relaxing and stimulate bowel cleansing. The more your bowels move, the more lemonade drink and powdered whey you should consume.

In a large study, 174 subjects drank only water for an average of 10.5 consecutive days, followed by a seven-day reintroduction of food using a vegan diet.<sup>76</sup> Those with systolic blood pressures greater than 180 mmHg and diastolic blood pressures greater than 110 mmHg experienced reductions of 60 mmHg systolic and 17 mmHg diastolic on average after the seven days of eating the vegan diet. All subjects discontinued their antihypertensive medications with no adverse events reported by the researchers.

## Lowering Cholesterol Naturally

The question has been posed to me, “can I alter my cardiovascular disease risk through diet?” I mention this because if you focus just on lowering cholesterol, you may be missing the boat on protecting yourself from heart disease. So, the answer to the original question is yes, and very dramatically! But just know that you may not alter the cholesterol value on a blood test, in fact it is lowered only by about 2 to 4 percent based on a review of 16 trials measuring the effect diet can have on lowering cholesterol.<sup>77</sup> This is because the body will increase the production of cholesterol when you eat less cholesterol and decreases when you eat more. But once again, you will have a profound effect on lowering your risk of cardiovascular disease.

The 1996 *British Medical Journal* reported a study of 10,771 healthy subjects who were recruited from health food shops and vegetarian societies and were followed for approximately 17 years. They were monitored as to their vegetarian eating and consumption of whole grain bread, bran cereal, nuts, dried or fresh fruit and raw salad. Researchers found that their death rate from all causes was HALF that of the general population. They noted that their daily consumption of fresh fruit was associated with significantly reducing the death rate from coronary artery disease and stroke. This is one of many studies showing dramatic results from simply eating nutrient-rich, whole foods on a consistent basis, without using many other natural therapies, stress reducers, exercise, etc.

The reason why the cholesterol number will not change much is due to the following more detailed reasons: When we eat saturated fat it enters our blood stream through a complex, fat-circulation system called the lymphatic system. In the lymph system, it forms into small droplets called chylomicrons. When chylomicrons get spilled into the blood from the lymph, cholesterol is essential to stabilize the fat they contain. Consequently, the more fat we eat, the more cholesterol we need in our blood! Cholesterol is a natural fat stabilizer.

This explains why the low cholesterol, low animal fat diet cannot lower cholesterol more than, on average, a few percent. So keep in mind that cholesterol really is not bad, and that it is not what we are treating, ultimately. It is the other factors of cardiovascular disease that I get concerned with, of which cholesterol is possibly only one indicator.

### **Some Interesting Studies on the Food-Cholesterol Disconnection**

In the early 1950's the Framingham Study failed to find a connection between eating habits and blood cholesterol levels in more than 1,000 people. William Kannel and Tavia Gordon, authors of the report wrote, "These findings suggest a cautionary note with respect to hypotheses relating diet to serum cholesterol

levels. There is a considerable range of serum cholesterol levels within the Framingham Study Group. Something explains this inter-individual variation, but it is not diet.” For unknown reasons, the details of their study were never published. The manuscript is reportedly still lying in a basement in Washington.<sup>78</sup>

A similar non-connection between eating healthy and cholesterol levels was published by the Mayo Clinic in Rochester, MN. The diets of 100 school children<sup>79</sup> were evaluated showing no connection between the two. Those who ate large amounts of animal fat had just as much cholesterol in their blood as those who ate very little animal fat. A similar study of 185 children was performed in New Orleans with similar results.<sup>80</sup>

In an Israeli study in Jerusalem, the intake of animal fat of the 10,000 subjects varied from 10 grams up to 200 grams daily, and they also had a wide variation in their cholesterol values. But there was no relation, as extremely low cholesterol values were seen in those who ate little and in those who ate the most animal fat.<sup>81</sup>

Despite the fact that diet may not affect cholesterol levels in most people, diet has a huge impact on heart health and the health of the rest of your body. This puts cholesterol in a new and proper perspective. For example, excess simple sugar may not affect cholesterol, but it clearly promotes obesity and proinflammatory markers like C-reactive protein over time; worsens insulin resistance (contributing to metabolic syndrome X and diabetes); increases triglycerides and more. So indirectly, sugar really does worsen your heart attack rate, but there is no money in getting Americans to stop eating refined sugar. Instead, corporations pump sugar into everything they want us to buy.

Lowering your cholesterol as you lower other underlying risks for cardiovascular disease is still a good idea. Here are proven ways to elevate HDL (good) cholesterol, lower LDL (bad) cholesterol and improve your heart health.

### **Increase Your Dietary Fiber**

In May 2004, data from the National Health and Nutrition Examination Survey (NHANES) revealed that high fiber is

associated with a lower C-reactive protein (CRP) level.<sup>82</sup> Looking at the results of 3,920 surveys, those consuming the highest amount of fiber had a more than 50 percent lower risk of having elevated CRP levels.

Fiber is particularly well suited to help heart health because of its ability to bond with cholesterol and take it out of the body. Oat bran, pectin, broccoli, legumes, ground seed, whole grains and rice all constitute healthy sources of natural fiber that, if taken daily, may not only make you regular, but provide a terrific source of cholesterol reduction.

I recommend you eat six servings of vegetables and three servings of fruit daily, plus beans and grains. Eating your grains in the form of bread or pasta does not count as a “whole food” and increases the likelihood for a proinflammatory state of obesity when eaten consistently in high amounts. I call bread and pasta the “filler food for fatties.”

We need about 75 grams of fiber daily to prevent disease. The recommended daily allowance (RDA) of fiber reported to us by the government places that daily amount at only 12 grams of fiber. That’s pathetic! That’s less than one-sixth of what we really need. In order to consume 75 grams of fiber daily, one must eat nine servings of fruit and vegetables, a lesser amount of cereal containing fiber, and lesser still of bread, even if it is from whole grain. The really healthy way to eat grains is to soak them and make them into soups.

## **Exercise**

Every person is drawn towards one activity they like to do for their body. Do you enjoy walking outdoors? Biking on a stationary bike? Or, how about hiking? It is critical to find something you truly enjoy if you are going to be able to continue your routine over the long term.

With exercise, the temperature inside your muscles increases the rate of metabolism 17 percent or more. It increases circulation by at least 100 percent and usually more. It brings more oxygen

to all the organs and tissues including the brain. It flushes toxic wastes from your body; that's why regular exercise reduces the risk of cancer, heart disease and more.

The Nurses Health Study (more than 23,000 nurses participating) found that in the more than 2,200 women in whom cardiovascular risk was being tracked, those who exercised approximately ten minutes, six days per week, had the same risk reduction compared to those who took Lipitor® 10mg daily! And yet the women who exercised had other health benefits that the Lipitor® patients missed out on.

### **Reduce Sugar Consumption**

Consider carbohydrates in the form of vegetables, whole fruits, fresh fruit juice and whole-grained foods. And when you need sugars, use low-glycemic sugars from natural sources. The table on Natural Sweeteners for Your Health (page 62) will guide you with sugar consumption. Try them—you'll like them!

### **Eliminate Hydrogenated and Trans Fats from Your Meals and Snacks**

The process of hydrogenation basically kills omega-3 oils. This process was introduced into North America by Procter & Gamble's first Crisco cookbook in 1912. Coincidentally, heart attack reports began being printed in *JAMA* not long after that.

Unhealthy fats are obtained in meat and dairy products. You get them from red meat, processed meats, high-fat dairy products and commercially deep-fat fried foods. So avoid these:

- Organ meat including liver, kidney, brains, heart, stomach, etc.
- Poultry skin
- Fried foods, including deep-fat fried fish
- Fatty red meat
- Processed meat of any type, including those made from turkey or chicken (surprisingly, these are often higher in fat than those made from beef)
- High fat dairy products, including milk, cheese, ice cream and yogurt

Healthier fats come in the form of whole foods such as avocados. Others safer fats are:

- Cultured dairy products, sour cream, plain yogurt, cottage cheese, fetta cheese, blue cheese and other fermented cheeses
- White meat of poultry with skin removed

### Increase Omega-3 Oils

There are numerous omega-3 studies that indicate taking eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) have clear, beneficial effects. Equally effective is to eat fish three times weekly.

On average, omega-3 oils generally do not lower cholesterol. However, large quantities of DHA do lower cholesterol somewhat, yet lower the risk of heart attack even more.

Omega-3 fatty acids have recently been shown to be more effective than statin drugs according to a published meta-analysis.<sup>83</sup> Swiss researchers reviewed 97 random controlled clinical trials, including more than 275,000 participants, and discovered that statin drugs decreased mortality by 22 percent, but omega-3 fatty acids decreased mortality by 32 percent. Even death from any cause was reduced by only 13 percent with statins but by 23 percent with omega-3 fatty acids!

It is interesting to also find studies showing that omega-3 fatty acids work by reducing inflammation, reducing blood thickness and preventing stickiness of LDL cholesterol.<sup>84</sup> Why not make fish (like ocean-raised salmon, herring and mackerel), cod liver oil, olive oil, borage oil, primrose oil and flaxseed oil a part of every meal?

## Keeping Blood Thin Naturally

**Nattokinase** is a potent fibrin inhibitor, reducing blood thickness and atherosclerosis of heart disease and stroke. I have a patient that does better on nattokinase and vitamin E than he ever did on Coumadin® and Lovenox® shots for recurrent pulmonary embolisms (clots to the lungs).

**Serreptase** digests blood clots and possibly arterial plaque. It has been used in Europe and Asia for more than 25 years. It is a

## Natural Sweeteners for Your Health

The following sugars are the next best thing to sugar found in the whole foods fruits and vegetables. These contain some nutrients, but still have a fairly high glycemic index:

- **Agave Nectar:** from a cactus-like plant in Mexico.
- **Fructose (Levulose):** found in many foods in combination with glucose and galactose such as honey, tree fruits, berries, melons, beets, sweet potatoes, parsnips and onions. Fructose has a lower glycemic index relative to sucrose. Please limit refined fructose consumption because it has been shown to damage cellular function through a process called glycation.
- **Sugar Alcohols:** sorbitol, mannitol and xylitol (wood sugar or birch sugar). Because they decrease infection from tooth-harming bacteria in the mouth, xylitol gums have actually been well proven to reduce dental cavities.
- **Rice Syrup:** from rice and sprouted grains. Maltose is the main sugar type here.
- **Turbinado:** raw sugar cane juice that has been dehydrated, colored and then crystallized. It should be considered a partially refined sugar.
- **Fruit Juice Concentrate:** remaining sugar from apples, devoid of most of its fiber, enzymes, vitamins and minerals.
- **Date or Kiwi Sugar:** made from dehydrated ground dates or kiwis. However, the fruit itself is always a healthier sugar than the powder from the fruit.

natural alternative to aspirin for its blood thinning effect. Serrapeptase, however, has no inhibitory effects on prostaglandins so stomach acid level remains unchanged.

**Vitamin E** has blood thinning effects. Daily intakes of 800 to 1600 IU will enhance the effect of nattokinase in a safe manner.

## EDTA Chelation

EDTA (ethylene diaminetetracetic acid) taken orally or intravenously is well known to open up small blood vessels and allow them to be more elastic. Perfusion of blood where it was formerly insufficient is a recognized method of reversing

- **Grade B Maple Syrup (unrefined):** from maple tree sap. Still contains some vitamins and minerals.
- **Unsulphured Molasses:** made from the juice of sun-ripened cane, blackstrap molasses. Is the residue of the cane syrup after the sugar crystals have been separated. Both are nutritious; containing high levels of calcium, iron and potassium.
- **Sucanat:** non-refined cane sugar that has not had the molasses removed from it. It contains nine minerals and six vitamins. Only minimally processed.
- **Rapadura:** essentially pure dried sugarcane juice much like sucanat.
- **Raw Honey:** made by bees and typically only sold in health food stores, but still contains minerals and vitamins.
- **Stevia:** a sweet herb powder.

### The Healthiest Form of Sugar is from Whole Foods

Better than all those sugars listed above are fruits and vegetables. These whole-food sugars also come with micronutrients known as fiber, enzymes, complete vitamins, organic minerals, antioxidants and phytochemicals. Both scientific literature and clinical experience definitively show that diets high in fiber, fruits, vegetables and herbal teas significantly reduce the occurrence of a host of deadly diseases. To protect your health, start implementing a whole-foods diet in your life—TODAY!

angina pectoris and lower extremity claudication. It is also the way to keep vessels working, blood pressure down and slow or stop the progression towards atherosclerosis.

### Some Things You Should First Know About the Opposition to EDTA Chelation

Even most practicing physicians are completely unaware that less than 20 percent of all biomedical scientific literature (including all languages) is available to you on the National Library of Medicine's Index Medicus and its public MEDLINE access at [www.pubmed.com](http://www.pubmed.com). Therefore, doing a computer search for positive outcome studies using EDTA chelation therapy in



the treatment of cardiovascular conditions is deceptively negative. Fortunately, there are a few who know how to expose misleading study design or those studies in which researchers report negative interpretations of what are actually positive results. More specifically, these negative misleading reports were the 153-patient Danish Study, the 17-patient New Zealand Study, the 20-infusion Heidelberg Trial, the most recent Canadian PATCH Study published in 2002 and several such studies used to persuade and confuse.

Unfortunately, once they publish their junk reports to discredit EDTA chelation into mainstream medical journals, the professional community becomes misled and biased against chelation.

In fact, you will find that most of the peer-reviewed literature available on the National Library of Medicine's public access website ([www.pubmed.com](http://www.pubmed.com)) is quite stacked with negative results and opinions towards the use of EDTA chelation for conditions other than lead poisoning. For example, authors stated the following: "Edetate disodium (EDTA) is a chelating agent which has no place in the treatment of atherosclerosis and its complications. Also, its toxic effects can cause other problems which may lead to a fatal outcome. Proper investigation and treatment may sometimes be delayed by a patient's faith in such therapy."<sup>85</sup>

Do not be too alarmed, this same author, R. Magee, published an opinion paper in another Australian journal in 2002 entitled, "Quacks: Fakers and charlatans in medicine." In this "scientific paper" he exposes his ignorance of valuable natural therapies by his dogmatic comments: "Alternative medicine has always had an attraction for some members of the community, and this has extended into the 20th century. Examples are given of therapies, such as that for the treatment of cancer and arterial disease, in recent years that can only be described as modern-day quackery."<sup>86</sup>

Yet there are thousands of physicians who have witnessed the value of chelation therapy in practice and who are familiar with the supporting literature (remember, there is no financial incentive tied to chelation therapy). For example, these authors, also published in peer-reviewed scientific journals, state in direct opposition to R. Magee: "The authors conclude that EDTA chelation therapy is a

valuable therapeutic option for vascular disease, either alone or in conjunction with standard treatment protocols.”<sup>87</sup> And a seasoned scientist from the University of California Berkeley published the following: “EDTA chelation therapy appears to achieve revitalization of the myocardium, and is a viable alternative or adjunct to revascularization. Fish oils are now proven to help revitalize vessel wall endothelia and to partially reverse atherosclerotic damage. Being safe and having proven benefits, chelation therapy and fish oils can be integrated together with nutrients, lifestyle-dietary revision, exercise, and medications as necessary, into a cardiovascular revitalization strategy.” You will also find that these latter authors present various interventions that are proven beneficial in their papers, while the anti-chelationists report only the negative information about chelation.

You might be also interested to know that statistical analyses of the more carefully performed studies on chelation show that the probability that these positive results are due to random chance alone ranges from less than one in 1,000 to less than one in 10,000. You deserve to be informed of the risks and benefits of all types of valuable interventions, not just the ones that are highly profitable for doctors and pharmaceutical companies. So now let me share with you just some of the eye-opening research that supports EDTA chelation.

### **Oral EDTA Chelation is So Safe—It’s in Your Food**

Did you know that taking an oral chelation supplement is many times safer than taking an aspirin a day? The *Journal of Chronic Disease* reported in 1963 that EDTA was approximately three times less toxic than aspirin.<sup>88</sup> And toxicological studies demonstrate aspirin to be more than five times more dangerous in rat studies.<sup>89</sup> However, that was before the effect of aspirin on a bleeding stomach was fully realized. Now, more than 40 years later, Dr. Gary Gordon, the leading authority on oral chelation, has declared EDTA, “300 times safer than aspirin!”

If oral EDTA is considered, “a true health hazard,” then why

has the U.S. Food and Drug Administration (FDA) approved it for use in foods that are enjoyed by everyone from our youngest babies to our oldest seniors? EDTA, first synthesized in Germany in 1935, is a simple amino acid, very similar in composition to common household vinegar. According to drug safety standards, EDTA has been shown to be significantly safer than aspirin.

EDTA so safely binds to harmful oxidizing metals in our foods that its widespread use is easily justified to stabilize fats, oils and vitamins; keep potato products from turning brown; keep fish and shellfish looking fresh in the supermarket; maintain the flavor and consistency of milk products; and protect canned vegetables. It can hardly be considered a health hazard. In fact, your personal consumption of EDTA from food sources has been estimated at between 15 mg and 50 mg daily, though it can safely be given in doses up to 1,000 mg daily to adults.

From 1970 to 1980 approximately 100,000 U.S. patients received in excess of 2,000,000 treatments of EDTA chelation without one report of significant toxicity.<sup>90</sup> I will venture to say that this amino acid exceeds the safety of each and every drug currently used in medicine.

### **Oral EDTA Chelation Removes Toxic Metals**

Oral chelation with EDTA is known to cause your body to excrete the toxic minerals lead (toxic to brain and nerves) and cadmium (toxic to kidneys) out of the body through your urinary tract. Did you know that even a slightly increased lead level raises your chance of death by 46 percent? Two important studies expose what many toxicologists have been saying for years about the destructive effect that metals have on brain function. In a 2002 article, the analysis of 4,292 individuals ages 30 to 74 years from 1976 through 1992, found that subjects with a slightly elevated blood lead level comprise 15 percent of the population! Among these people with slightly elevated blood lead levels there was a 46 percent increased death rate (all-cause mortality) compared to those with completely “normal” blood lead levels.

Actually, there is no safe lead blood level. In other words, any detectable lead level is a risk to your health. Another study (*New England Journal of Medicine*, 2003) reported a consistent and direct correlation with blood lead levels in children and their worsening IQ levels at ages three and five, even down into the “normal range,” showing that all lead is harmful. They concluded that, “These findings suggest that more U.S. children may be adversely affected by environmental lead than previously estimated.”

But the ability of oral chelation to eliminate toxic metals is quite impressive. The University of Michigan recently hosted scientists and researchers from all over the world at a conference on toxic heavy metals. Along with the overwhelming evidence of the benefits of chelation for a wide range of conditions, a study on oral chelation reported heavy metal urine analyses of 14 patients ages 29 to 73, before and after only one dose of an oral chelation EDTA product. Results showed a significant excretion of all six of the toxic heavy metals most commonly encountered. The average percentages of heavy metal excretion increases in the 14 patients after just one day of oral EDTA: Aluminum: 229 percent; Arsenic: 661 percent; Cadmium: 276 percent; Lead: 350 percent; Mercury: 773 percent; and Nickel: 9,439 percent. So please don't be scared into thinking that oral chelation is a health hazard because you may lose some trace elements along with the toxic ones. In fact, let's examine trace element excretion and oral EDTA.

### **Oral EDTA Chelation— Easily Overcoming Trace Mineral Excretion**

It is true that along with causing you to lose toxic heavy metals, EDTA can also cause you to lose the important trace minerals zinc and calcium if you don't get enough in your diet. And the simple recommendation to supplement with zinc and calcium with oral chelation has proven to more than make up for this trace mineral excretion. Essentially, the potential of trace mineral depletion of any consequence to your health is minimal according to the research by Dow Chemical and also a 2000 report published in *Food Chemical Toxicology*.<sup>91, 92</sup> Even better news is that EDTA

appears not to deplete the trace minerals cobalt, chromium, and copper. Fortunately, EDTA causes a slight retention of beneficial trace mineral magnesium.<sup>93</sup>

Other research shows that trace minerals become even more bio-available with oral EDTA.<sup>94</sup> At the National Institutes of Health (NIH) and Office of Dietary Supplements (ODS) Bioavailability Conference, the ENVIRON International Corporation's report regarding mineral absorption revealed that EDTA is a dietary factor that enhances the absorption of zinc with protein, cysteine, citrate and methionine.<sup>95</sup> Therefore, making the blanket statement, "EDTA is not recommended for oral use," based on its trace metal excretion properties is like advising you not to exercise because you lose some minerals in your perspiration—or abstaining from eating fruits and vegetables because of the risk of pesticide poisoning. Therefore, let me point out the many proven benefits of EDTA chelation and then I'll tell you about the thousands of individuals who have reported to me the health benefits they've received from oral chelation.

### **Benefits on Heart and Blood Vessels—Amazingly Effective**

Studies showing the benefits of EDTA chelation began in 1953 when Dr. Norman Clarke, Sr. and associates in Detroit, MI, began using EDTA chelation to reduce coronary heart disease. In 1956, they had treated 20 patients who were suffering from chest pain. Out of the 20 patients, 19 had "remarkable" improvement in symptoms.<sup>96</sup>

For several years, many small studies and clinical observations were performed by open-minded physicians who disapproved of the tremendously expensive mainstream medicine's approach to treating heart disease—open heart surgery.

Did you know that 44 to 85 percent of coronary artery bypass surgery has been routinely performed without patients even meeting the criteria for benefit?<sup>97, 98</sup> Yet, mainstream medicine (where the power and the money is) consistently supports such flagrant abuses of surgery all the while ignoring EDTA chelation therapy. These over-riding recommendations come from the cardiovascular surgeons, the American Heart Association and the American College

of Cardiology. Yet even the American Medical Association admits that 44 percent of coronary artery bypass surgeries are done for inappropriate reasons.<sup>99</sup>

In this environment, further studies continued to demonstrate successes with EDTA chelation therapy, only acknowledged by physicians willing to find safer treatments for mild to moderate heart and blood vessel conditions.

### **A Retrospective Study of 2,870 Patients Shows 89 Percent Get Good Results!<sup>100</sup>**

In a 28-month retrospective study of 2,870 patients with documented atherosclerosis and other degenerative illnesses, researchers Efrain Olszewer, M.D., and James P. Carter, M.D., Ph.D., found that when patients were treated with disodium magnesium EDTA chelation therapy there were remarkable benefits in multiple areas of health:

- 76.9 percent of treated patients with ischemic heart disease had marked improvement and 17 percent had good improvement.
- 91 percent of treated patients with intermittent claudication (sign of advanced peripheral vascular disease) had marked improvement and 8 percent had good improvement.
- 24 percent of treated patients with cerebrovascular and other degenerative cerebral diseases had marked improvement and 30 percent had good improvement.
- Three out of four treated patients with scleroderma had marked improvement and one had good improvement.
- 75 percent of all patients with symptoms of vascular origin had marked improvement.
- In summary, 89 percent of all treated patients had marked or good improvement independent of pathology!

### **Improvement by 80 to 90 Percent Found in a 470-Patient Prospective Study<sup>101</sup>**

In 1993, two well-respected Danish doctors, Hancke and Flytje, measured improvements in several different criteria among

470 patients who were followed for six years after receiving chelation therapy. They found a 90 percent improvement reported in 265 patients with documented coronary artery disease. Of these, 65 had already been referred for bypass surgery before chelation. And an impressive 58 out of these 65 improved so dramatically after chelation therapy that they completely avoided surgery! For those patients using nitroglycerine to control their angina chest pain, 189 out of 207 were able to reduce their consumption because of EDTA chelation. Most of these discontinued nitroglycerine altogether. Plus, 24 out of 27 patients awaiting foot or leg amputation avoided surgery.

### **EDTA Chelation Therapy Gets 88 Percent Improvement in Cardiovascular Function: A Meta-Analysis**

In 1994, researchers L. Terry Chappell, M.D., and John P. Stahl, Ph.D., performed a meta-analysis of current available studies using intravenous (I.V.) EDTA chelation therapy for cardiovascular disease. In their search, they identified 40 articles on the subject. Of the 19 studies which met their criteria for validity, there were 22,765 patients included. Their analysis revealed that, on average, there was an 88 percent positive relationship between EDTA therapy and improved cardiovascular function as demonstrated by clinical improvement and objective before-and-after testing. Then, to add confidence in the effectiveness of EDTA treatment, they collected unpublished “file drawer” data from 32 clinicians who utilize I.V. EDTA, and found improvement in 1,086 of the 1,241 patients (88 percent).<sup>102</sup>

As a result of historical success and ongoing clinical satisfactory results with patients, an estimated 1,526 U.S. doctors currently recommend EDTA chelation as a central focus of therapy to their patients. And chelation therapy has been given to more than one million Americans and three million patients in Canada, Europe, Australia and South America.

### **Benefits on Blood Thinning and Lowering Cholesterol**

There is evidence that oral EDTA also has the health benefit of

causing an anticoagulant and anti-platelet effect. This is thought to occur through its effect of chelating calcium ions.<sup>103, 104</sup> Other ways it has been shown to keep your blood thin is by prolonging prothrombin time<sup>105</sup> and influencing platelets<sup>106</sup> and cell membranes.<sup>107</sup> EDTA chelation is also thought to lower cholesterol.<sup>108</sup>

### **Benefits on Musculoskeletal, Skin, Neurological and Cardiovascular Symptoms**

After an approximate 26 infusions of EDTA, plus multivitamin and mineral replacement, the following conditions improved:<sup>109</sup>

- 101 patients with musculoskeletal complaints had an average 31 percent improvement.
- 64 patients with skin complaints, averaged a 28 percent improvement.
- 108 patients with neurological complaints, averaged a 23 percent improvement.
- 130 patients with heart or blood vessel complaints, averaged a 22 percent improvement.

### **Benefits on Diabetes**

EDTA and supplemental chromium have both been shown to improve blood glucose, lipids and insulin activity in diabetic patients.<sup>110</sup> Testimonials to this are also mounting with the use of oral EDTA chelation supplements.

### **Unforeseen Benefits**

As millions of Americans and others around the world continue to use EDTA chelation therapy, they are reporting other health benefits not researched in clinical studies. The following is a sampling of results I have personally read from patient testimonials regarding oral chelation products:

- High cholesterol, homocysteine levels and blood pressure are reduced to normal levels.
- Irregular heartbeat and palpitations are reduced or eliminated.
- Chest pains are eased and chronic shortness of breath is reversed.



- Heart and brain vessel blockages are dramatically reduced.
- Cold, numb and painful extremities are warmed and soothed.
- Swelling of the lower legs and ankles is alleviated.
- Painful and stiff joints are alleviated.
- Blood sugar imbalances are improved.
- Chronic infections become less frequent.
- Enlarged prostate symptoms are reduced.
- Insomnia is replaced by deep, restful sleep.
- Floaters in the eye are diminished.
- Male erectile problems are reversed.
- Age-related cognitive decline and memory loss are halted or even improved.
- Skin problems vanish—face regains youthful elasticity.

### **Chelation Summary**

Indeed, opponents to EDTA chelation therapy have tried to make it a controversial subject, but it really isn't. The truth is, most doctors are inexperienced in chelation and understand little about how it works. They are simply uninformed.

The medical care for cardiovascular disease using standard interventions to Americans is more than \$280 billion annually, and one bypass graft surgery alone is approximately \$50,000 including all costs involved. This “standard of care” surgery has been harshly criticized to be over-prescribed and often unnecessary by numerous leading medical doctors and authorities. Yet, the machine of orthodox medicine continues to charge Americans the big bills—even though nearly 15,000 people die every year as a result of bypass graft surgery or balloon angioplasty.<sup>111</sup>

Finally, when you consider that there are 935,000 new and recurrent heart attacks per year in the U.S. annually, along with 15.8 million victims of angina,<sup>112</sup> does it not make sense to find a safe and effective alternative to standard treatments for this condition? EDTA chelation therapy is part of the better answer,

and oral chelation is the simplest way to get a constant low dose of EDTA to help open, or keep open, small arteries for optimum blood flow to organs.

## More Supplements to Lower Your Risk of Cardiovascular Disease

### Policosanol

Policosanol, or inositol hexanicotinate, is a natural supplement made from sugar cane. It caused a 26-percent reduction in total cholesterol and a dramatic increase in HDL cholesterol in a double-blind, placebo-controlled trial of more than 200 participants. Other studies get similar results with policosanol. For example, in a double-blind, placebo-controlled study, older patients with hypertension and high cholesterol were put on a cholesterol-lowering diet for six weeks and then treated with either policosanol or a placebo for one year. The results showed the policosanol group had lowered serum LDL cholesterol by 20.5 percent; lowered total cholesterol by 15.4 percent; lowered triglycerides by 11.9 percent; and increased HDL (good) cholesterol levels by 12.7 percent. The policosanol group also had lowered systolic blood pressure, experienced zero negative side effects and lived longer than the placebo group. Also, the *American Heart Journal* reviewed 21 different studies on policosanol and uncovered that, on average, patients lowered cholesterol 17 to 21 percent, lowered LDL-C 21 to 29 percent, raised HDL-C eight to 15 percent and experienced little to ZERO negative side effects.

### Phytosterols

Plant sterols are naturally found in raw fruits, vegetable oils, and legumes. *The American Journal of Managed Care* reported: “Plant sterols are recommended by the American Heart Association and the *National Cholesterol Education Program Expert Panel* as adjunct therapy to reduce LDL.”

**Niacin**

Taking niacin daily has been demonstrated to raise healthy HDL cholesterol by up to 35 percent and lower the bad LDL cholesterol by up to 25 percent. Niacin in the flush-free form called inositol hexaniacinate works best.

**Vitamin E**

Taking 500 to 1000 IU of vitamin E daily can help decrease lipid peroxidation (vessel damage). Tocotrienols (useful part of vitamin E) inhibit the production of the enzyme called HMG-CoA reductase, an enzyme your body needs to create cholesterol. One study shows that patients taking 200 mg per day of tocotrienols for four weeks lowered serum cholesterol levels by 31 percent.

**The Minerals**

Selenium: 200 mcg/day

Chromium: up to 600 mcg/day

Calcium: 400 mg/day

Magnesium: 400 mg/day

**Lecithin**

Taking 1,000 mg of lecithin three times a day (with meals), which contains a special polyunsaturated fat called linoleic acid, helps lower cholesterol.

**Guggulipids**

These stimulate the production of bile acids to quickly remove cholesterol from your body. The journal *Atherosclerosis* reported that guggulipids may help prevent plaque build-up in your arteries. In one double-blind, placebo-controlled study reported in *Cardiovascular Drugs and Therapeutics*, patients were administered guggulipid therapy and, on average, lowered total cholesterol by 11.7 percent; LDL-C by 12.5 percent; and triglycerides by 12 percent.

## Antioxidants and Other Heart-Protecting Supplements

In the case of heart disease, where oxidized LDL cholesterol and oxidized inflammatory fats are ingredients in the creation of arterial plaque, we must stop the oxidation process that causes so much damage at the cell level. The following antioxidant nutraceuticals are known to reverse the damaging effects of aging on endothelial function:

- **Coenzyme Q10** can effectively boost the strength of the heart muscles, and increases the ability of the electrical functions to perform properly. It is the spark that ignites the formation of ATP in the cell by the mitochondria and helps to protect us against cardiovascular disease when taking 100 mg daily. Keep in mind that the heart muscle has 5,000 mitochondria per cell making ATP while skeletal muscle only has approximately 200. CoQ10 also improves heart function if taken before surgery.
- **L-Carnitine** brings in long chain fatty acids across the mitochondrial membrane where they produce biological energy in the form of adenosine triphosphate (ATP). This nutrient partners with CoQ10 and D-Ribose. Also, the supplement propionyl-L-carnitine (PLC) supplies the cell mitochondria with L-carnitine. This is significant because endothelial cells and heart muscles use fatty acids rather than glucose to generate the majority of their energy fuels.<sup>113</sup>
- **D-Ribose** is a sugar-like molecule that works at the mitochondrial membrane, acting as a powerful substrate (starter molecule) for CoQ10 and L-carnitine to do their job well.
- **Green Tea** is a powerful herb with antioxidant properties with a proven history among the Chinese for thousands of years in preventing atherosclerosis and cancer. There is only 1 to 4 percent caffeine in it, and unless you have green tea asthma, you can drink six to ten cups daily. There is a capsule form that is dosed at three tablets daily. It can decrease postprandial lipoproteins by up to 30 percent if

you get the supplement dose equivalent to six to 12 servings of brewed tea.<sup>114</sup> Green tea can also accelerate weight loss for added heart health. Decaffeinated brands are available in health food stores.

- **Quercetin** may help prevent atherosclerosis by inhibiting the oxidation of LDL cholesterol.<sup>115</sup> The use of quercetin produced a 73 percent reduction in the risk of stroke in one study.<sup>116</sup>
- **Hawthorn Berry** is an herb with a long history as a heart tonic. It is particularly well documented in its ability to normalize metabolic pathways of the heart—from helping normalize irregular heart beats to reducing blood pressure. This herb can be sipped as a drink or taken as a capsule daily.
- **Ginkgo Biloba.** This herb generally increases the blood flow capability of the vascular system. Your blood vessels get increased ability to deliver blood and oxygen to all your organs. This also affects memory and other brain functions. It has potent antioxidant properties, which are believed to be responsible for its anti-aging effects, and it limits blood clots.
- **Garlic** has been researched and shown to act as antioxidant, reduce arterial plaque development, reduce blood clotting, increase vessel elasticity, lower fibrinogen levels, lower cholesterol and lower blood pressure.<sup>117</sup> I recommend this spice be taken with food as much as possible or taken as a capsule.
- **L-Taurine** is an amino acid proven to improve and normalize arterial endothelial function when taken in doses between three and six grams daily. When patients suffering from lower extremity claudication take this higher dosage, they get a noticeable improvement in their walking speed and distance. L-aurine causes arterial dilation to increase blood flow. L-aurine is a precursor molecule to nitric oxide, which boosts arterial dilation (Cockcraft JR 2005). L-aurine has also been found to reduce heart arrhythmia (irregular heart beat).
- **Soy Protein** from tofu, soy milk, soy protein powder and other sources at 20 grams per day can lower LDL by 10 to 20 mg/dL and reduce postprandial lipoproteins by 10 percent.<sup>118</sup>

- **White Bean Extract** causes sugars to go undigested and unabsorbed by blocking amylase the enzyme that digests sugars. Participants who took 1,500 mg of white bean extract twice daily for eight weeks lost four pounds and lowered their triglycerides by 26 mg/dL on average.<sup>119</sup>
- **L-Arginine** at 6,000 mg daily has been shown to dramatically lower cholesterol and relax blood vessels via the production of nitric oxide. Be aware, however, that one study from Johns Hopkins Medical Center in Baltimore showed an increased risk of death in heart attack patients taking L-arginine. It is believed that when nitric oxide is generated to relax blood vessels it also can generate free radicals. Therefore, taking antioxidants such as vitamin C and vitamin E can counter this.
- **Alpha Lipoic Acid.** This antioxidant acts as a coenzyme in the energy metabolism of fats, carbohydrates and proteins. It can regenerate or restore electrons to the ubiquitous antioxidants vitamin C and glutathione, which in turn both restore vitamin E. Alpha lipoic acid also manages normal blood glucose levels in patients with diabetes.<sup>120</sup> Alpha lipoic acid improves endothelial function in persons with metabolic syndrome.<sup>121</sup>
- **DHEA** is one of the precursors to testosterone and estrogen. Levels of these sex hormones (including DHEA) decline with the age and with chronic illness, hypertension and atherosclerosis. The decreased levels of DHEA inversely correlate with inflammatory markers. A study showed that men with high levels of DHEA tended to have greater protection against aortic atherosclerosis progression.<sup>122</sup>
- **Phytoestrogens** given during and after menopause have been shown to improve vascular function, which tends to decline with age. In one study it was given as a daily 54 mg supplement for one year and significantly improved vasodilation of the arterial endothelium in postmenopausal women.<sup>123</sup>
- **Artichoke Leaf Extract** has been known since the 1930s to help reduce the effects of atherosclerosis. A 1996 study of 553

outpatients showed a modest reduction of 11.5 percent in cholesterol and 12.5 percent in triglyceride levels in the blood.

■ **Curcumin** comes from the turmeric root, a spice in the ginger family. This is used for cholesterol reduction because it interferes with cholesterol absorption in the intestine, and increases the conversion of cholesterol to bile acids and the excretion of bile acids.<sup>124</sup> It has been shown to exhibit antioxidant, anti-inflammatory, antiviral, antibacterial, antifungal and anticancer activities, and thus has a potential against various malignant diseases, diabetes, allergies, arthritis, Alzheimer's disease and other chronic illnesses.<sup>125</sup>

## **Mind/Body Medicine**

Do you know the characteristics of a type A personality? It is the perfectionist who always needs to be right and gets upset easily. The type B personality is relaxed and noncompetitive. There is also a type C personality. This is the person who is outwardly pleasant yet suppresses feelings. This type of personality is more prone to developing cancer and heart disease than even types A or B according to published literature. Finally, there is the type D personality that is always distressed. This person is characterized by a predominance of the unhealthy characteristics of the other three personality types such as anxiety, irritability, hopelessness and a lack of self-assurance. This personality type has the strongest association with high blood pressure, heart disease and other chronic illnesses.

A 2001 study reported in *Circulation* compared treatment for emotional distress with conventional medical treatment alone among 150 men with comparable heart disease severity. The men taught stress reduction techniques were four times less likely to die after nine years compared with those who didn't learn the techniques. And this treatment group also enjoyed a better mood and quality of life during these nine years. Similarly, a January 2006 study conducted in the Netherlands followed 875 patients who had recently undergone procedures to open their coronary arteries. Those who scored highest for type D personality

traits on the distress questionnaire were found to have four times more heart attacks or death compared with others in the group.

Have you ever considered what is stopping you from being stress-free all the time? It really boils down to how you think and feel about everything in life. For many people it is their thought programming, their beliefs and their habit of thinking the worst when circumstances veer unexpectedly. This keeps them from seeing the beauty in all of their life experiences. Does this describe you? If so, keep reading.

## **Love: The Best Medicine for Heart Health**

While optimal nutrition and exercise are key factors for health, true health is more than these. To be truly healthy you must experience love and intimacy in your life. These are the very roots of health. Similarly, the way to heal your body and cure dysfunctional personality traits is to feel the healing effects of these most important energies in motion (or “e-motions”). You can instantly recognize these e-motions when you experience the warm feeling of close connections and friendship. All people innately thrive on acceptance and love.

Yet most find love in counterfeit forms. These counterfeit forms of love are represented as material things, the praise of society and feeling more powerful than others. Even criminals in our prisons are there because they sought counterfeit forms of love that resulted in their destructive behaviors and loneliness. There are many forms of counterfeit love, yet they all fall short of the pure energy we recognize as unconditional love.

The power of love and connection has actually been measured in terms of health outcomes. In a Yale University study, those who felt the most loved had much less blockage in their coronary arteries. Similarly, Case Western Reserve University researchers studied close to 10,000 married men only to find out that those who said “yes” to the question, “Does your wife show her love?” had significantly less chest pain (angina).



Furthermore, in a survey of men and women with heart disease by Duke University, researchers found that the death rate after five years was three times higher for those who were single or lacked a trusted friendship connection. Both of these studies found the protective effects of love to be independent from other risk factors.

One doctor recently wrote about his experience with a patient: “This man (61-year-old executive) was in the midst of a divorce when he was stricken [with a heart attack]... he had fallen out of touch with friends and family members. Unaware of the strife in his life, I counseled him to change his diet, start exercising and quit smoking. It was sound advice, but in combing the medical literature, the patient discovered that he needed to do more. Studies suggested that his risk of dying within six months would be four times greater if he remained depressed and lonely. So he joined a support group and reordered his priorities, placing relationships at the top of the list instead of at the bottom. His health has improved steadily since then, and so has his outlook on life. In fact he now describes his heart attack as the best thing that ever happened to him. ‘Yes, my arteries are more open,’ he said. ‘But even more important, I’m more open.’”

## **Meditations, Qigong, Yoga and Tai Chi for Heart Healing**

Meditation-based therapies are self-healing techniques that focus on bringing about a state of self awareness and inner calm. Meditations include such exercises as listening to the breath, repeating a mantra or detaching from the thought process. A mantra is a short phrase or affirmation that empowers the individual. It focuses the body’s neurochemical pathways toward healing, soothing, calming and internal relaxation of the autonomic nervous system. Examples of such phrases to be verbalized that are effective in healing through the mind/body connection are the following:

- Be still and know that great good is at work here.
- God loves me, God is within me, God is guiding me and showing me the way.
- Divine love does its perfect work in this situation NOW.
- All is well. I let go of what goes. Divine restoration is now taking place.
- I forgive and release all resentment for \_\_\_\_\_ (name of person) NOW. Our relationship moves forward in joy and love.
- I fully and freely forgive you and I release you to your highest good. I do so with love and gratitude in my heart.

The simplest way to get started is find a quiet and personal place, whether that be in the home or out in nature nearby. Once you feel free from distractions, begin to breathe slowly, expanding your abdomen with the in-breath, which leads to the out-breath. As you do so, let each out-breath be the vehicle to physically release tension, anger, frustration or sadness from your body. At the same time, notice you are then able to replace those feelings with new feelings of peace, calm and love. Allow these new, good sensations to gradually enter your body from your head (called the crown chakra) and slowly move down into your entire body. Over a period of five to ten minutes, you will actually feel like you are floating away.

Now consider finding and taking with you (via a headset) music that is calming and heavenly in its feel. This is best when there is no rhythmic beat or words to a song so that the vibrational frequency of these musical sounds create the energy that actually resonates with the feelings you are inviting into you. With a little practice, you will begin to feel that you are beautiful, fulfilled and on the path to healing. These feelings I describe here are also described by thousands who have had the profound experience of dying and then returning into their body to live and tell about it. These are spiritual feelings and they are very real, even though they are not accessed nor controlled

by the ego (logical mind). Go ahead and give it a try—it works for me!

Meditation has been proven to be very effective in lowering blood pressure<sup>126</sup> and in the treatment of coronary artery disease,<sup>127</sup> asthma,<sup>128</sup> irritable bowel syndrome<sup>129</sup> and seizure disorder (a decrease of 86 percent with six months of yoga practice in a controlled trial).<sup>130</sup>

It is also reported that meditation increases the alkalinity of body tissues, probably through enhancing the parasympathetic (“feed or breed”) nerve pathways. Meditation, offering a level of rest to the body considered twice as deep as that of sleep, is definitely a powerful antidote to stress.

A review of 24 studies addressing the benefits of Transcendental Meditation (TM) in treating and preventing chemical substances abuse was performed in 1991. The studies showed positive effects from meditation, showing that TM addresses several underlying factors of chemical dependence.

TM provided not only immediate relief from distress but also long-term improvements in self-esteem, personal empowerment, well-being and other areas of mind/body health.<sup>131</sup>

Stress-reducing techniques are a critical part of getting and staying healthy in my clinical practice. These are far safer, longer lasting and life changing than just pill-taking to reduce stress. The challenge for me has always been getting my patients to first be open to learning about it, and second be willing to make it a part of their personal routine of healthy living. And the best news about these tools is that none of them cost any money, yet they can be considered priceless once their value is known.

## **Meditation Variations**

Meditation can also be like a form of prayer. You need not necessarily ask for these feelings to come from a higher power, though that is the source. Know that these feelings are already

part of your nature (as it is for all living things) and you can access them the moment you learn to open your heart to them. It just takes pushing aside your limiting beliefs about your worthiness, or your inability to tune into such powers.

Once again, start by finding a quiet place in your home or out in nature, and allow yourself approximately 30 minutes of uninterrupted time. It also helps to find a peaceful musical sound or song without words for a background. You'll want to be 100 percent attentive for this short activity.

Are you ready? Do you have your background soft music available? And remember this is not something to be rushed through. Now follow these steps:

- Place your hands with palms down on your lower abdomen. Women use the right hand on the abdomen; men use the left hand.
- As you inhale, the abdomen expands, and as you exhale, the abdomen contracts. Regulate your breath to be deep, slow and even. Make your inhaled breath equal in length to your exhaled breath. Continue this pattern, allowing your entire body to relax, yet feel energized.
- Now allow yourself to release all distractions, deadlines and stresses. Continue to calm your autonomic nervous system through this type of breathing for the next three to five minutes while you play your soft background sounds. While you do so, create a mental picture of the life force energy as a bright light beginning to appear in your lower abdomen. At first, imagine it as an extremely small night light bulb, but as you breathe and relax, imagine it gradually getting brighter and brighter. Soon it is so bright you cannot look directly at it, rather only at its radiance.
- As you inhale, see that the light radiates toward your lower back. As you exhale, this light of the life force energy moves back to where your hands are on your lower abdomen again. Allow each in-breath to pulse that bright light of life force energy to another point of your body.

And on the out-breath the light pulses back to your abdomen again.

- Practice your deep, slow, gentle and even breathing, visualizing the light energy filling every part of your body. As it moves into each body space it leaves a residual of light behind, which also gradually gets brighter.
- Let every part of your body that is unhealthy or painful receive this light so that it calms, rejuvenates and heals. Within just a minute you can see your whole body filled with light.
- Continue the process of expanding the life force energy throughout your body for the duration of the meditation (from five to 30 minutes). Let go of any expectations. Feel the feelings of peace, love, confidence and of healing from within.

I invite you to repeat or keep your peaceful music going as you open a personal journal and write down your stress-reduction experience. Complete the following phrase in your journal: “My experience of meditation breathing...”

A variety of exercise tools can reduce stress even more dramatically than walking. I have highlighted the three below because their effect on stress is dramatic and more enjoyable than difficult, traditional aerobic exercises. These exercises are considered regenerative and contribute to a stress-reduced life.

## **Yoga**

The Five Principles of Yoga are proper relaxation, proper exercise, proper breathing, proper diet and positive thinking with meditation. Ironically, the last three of these, breathing, diet and positive thinking with meditation, are covered quite well in this program. The first two, relaxation and yoga postures, are what I would like to explain further to you. The relaxation principle of yoga releases your muscle tension and puts your whole body at rest. By relaxing your mind and body,

you revitalize your nervous system en route to achieving inner peace, which extends into all your other daily activities.

The proper exercise of yoga is achieved through the yoga postures. These include initial relaxation of the eyes, neck, shoulders and whole body; stretching in positions of standing, kneeling, sitting and backbends; and balance poses. If you purchase a yoga DVD to do yoga in your own home, know that there are numerous subtypes of yoga. From beginning yoga to advanced variations, they all improve your core muscle strength and flexibility by holding postures for an extended time while focusing your mind and regulating your breathing. Then they should open your body up to deep relaxation and healing teaching you to reconnect with your innate goodness, power and beauty. It is actually much more difficult than it may appear, but don't expect to get a good sweat or to bulk up your muscles like other exercise activities.

## **Qigong**

Qigong (pronounced *chee-gong*) is a health maintenance tool combining meditation, physical movements and controlled breathing. It appears as slow dance-like movements combined with mental and spiritual focusing on the connection to the energy force that Asians call "chi," which means life force energy. The exercise promotes a smooth flow of chi throughout the body, so that the body can heal itself. Chi feels like a tiny vibration throughout the body that creates feelings of love and enthusiasm for self and all others.

The concepts of Qigong can be traced back some 5,000 years, drawing on Taoism, Buddhism, Confucianism and common sense philosophy. A growing number of medical doctors and other healthcare professionals from around the world are learning and recommending this healing dance exercise. There are over 1,000 scientific papers and studies to support the beneficial effects in nearly all areas of health, found at the Qigong Institute in Menlo Park, Calif., or on their website at [www.qigonginstitute.org](http://www.qigonginstitute.org).

**AVOID These Foods**

All refined sugars

White bread

White rice

Processed meats

Processed cheese

Pasteurized dairy milk

Juices in bottles, cans, etc.

Hydrogenated (trans-fatty) foods such as burgers and french fries

**HEALTHY ALTERNATIVE Foods**

Fruits, raisins, dates, sucanat, stevia, xylitol, agave

Herb/veggie/whole wheat tortilla, limit wheat bread

Brown rice, wheat, triticale, millet, barley, rye

Free-range turkey, chicken or cold water ocean fish

Goat cheese, feta, chevre, blue cheese

Rice milk, almond milk, soymilk, raw cow or goat milk

Fresh squeezed or juiced, water with fresh lemon

Salads topped with chicken or fish, fresh fruit, cooked or raw vegetable, baked potato with sour cream

**Tai Chi**

Tai Chi is somewhat similar to Qigong. It is the most widely known form of Chinese exercise. It looks like a physical meditation art, which uses posture, slow movement and breathing to harmonize and energize. It has been well proven to be a valuable exercise in reducing many different parameters of stress and improving well-being.

**Nutritional Heart Health**

You'll know you're on the path to heart health when you eliminate white flour, refined sugar and hydrogenated oil on a consistent basis, and eat the whole foods that are high in micronutrients, yet low in calories. For example, above I have outlined foods to avoid in the left column with their healthy alternative in the right column.

Also avoid processed and altered foods that come in a box, can, bottle or package such as crackers, cookies, pudding, sodas, sandwich spreads, fruit snacks, most cold cereals, TV dinners, frozen pizzas, etc.

## **Summary**

Cardiovascular disease is so prevalent that even those ages six to 30 have already developed its early stages. The current standard treatment in medicine can save your life from an impending heart attack in the emergency room. Yet, this is also a disease that can and should be largely prevented.

By addressing any and all risk factors, one may effectively prevent heart attack and stroke in most all cases. And there are many pharmacological and natural therapies to do so. The underlying inflammation of the artery endothelium is where all the risk factors influence to some degree. The most impact in your life on heart and blood vessel health will be seen when you decide to get serious about living the true health lifestyle.



## About the Author



Dr. Michael Cutler, M.D.

Dr. Cutler is a Board Certified Family Physician specializing in chronic degenerative diseases, fibromyalgia, and chronic fatigue. He is a graduate of Brigham Young University (BYU), Tulane Medical School and Natividad Medical Center Family Practice Residency, in Salinas, California.

Dr. Cutler has successfully brought professionals of several healthcare disciplines together to bridge the gap between conventional medical training and effective complementary medicine.

Through his patients' experiences, as well as his own, Dr. Cutler has found many complementary practices to augment conventional medicine as an integrative solution. Because of his understanding of nutritional and natural medicine, he strongly promotes self-reliance in healthcare.

Dr. Cutler has more than 18 years of clinical family practice experience. His focus in clinical care is a highly educational approach, with a focus on the cause of illness. Dr. Cutler is uniquely qualified as a noted authority on preventive solutions to aging issues, general family ailments and nutrition, with an understanding and respect for the natural harmony of the human body. He has devoted his career to learning how to optimize health through simple changes in diet and lifestyle. His goal is to educate others so they can heal and teach others such principles of sustainable health, thereby shifting the paradigm of health care to one of personal empowerment and inspiration from God.

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