

**Reverse Your
DEADLY
HEART
PROBLEMS
NOW**



Stephen Sinatra, M.D.

Reverse Your Deadly Heart Problems NOW



Using targeted, alternative therapies, you can overcome common cardiovascular conditions (coronary artery disease, angina, arrhythmia, atrial fibrillation, congestive heart failure, heart attack, or stroke), and reclaim your health.

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Meet Stephen Sinatra, M.D., F.A.C.C., F.A.C.N., C.N.S.

Dr. Stephen Sinatra began his medical career at Albany Medical College in New York, graduating in 1972. He was certified by the American Board of Internal Medicine in 1975, and two years later, following a cardiology fellowship at St. Francis Hospital in Hartford, Connecticut, he received his certification from the American Board of Cardiovascular Disease. In 1977, Dr. Sinatra became a fellow of the American College of Cardiology, the organization's highest level of recognition.

Dr. Sinatra realized very early in his career that in order to truly help patients, he needed to do more than merely treat their symptoms. He began studying heart disease from nontraditional perspectives, taking courses in bioenergetic analysis (a field that examines the relationship between the

mind and the physical body), and immersing himself in nutrition to learn how vitamins and minerals influence cardiovascular health. Dr. Sinatra earned certifications in bioenergetic analysis, anti-aging medicine, and nutrition, and became a fellow of the American College of Nutrition.

From 1977 through 2007, Dr. Sinatra was an attending physician at Manchester Memorial Hospital (Eastern Connecticut Health Network), where he served for nine years as chief of cardiology and 18 years as director of medical education. Dr. Sinatra also served on the Connecticut State Medical Education Committee for 17 years, and he is currently an assistant clinical professor at the University of Connecticut's School of Medicine.

In 1987, Dr. Sinatra founded the New England Heart and Longevity Center. Through it, he became a well-known advocate of combining conventional medical treatments for heart disease with complementary nutritional, anti-aging, and psychological therapies. As interest in his treatments grew, Dr. Sinatra launched his monthly newsletter, *Heart, Health & Nutrition*, as well as his own Advanced BioSolutions supplement line.

Dr. Sinatra is a three-time recipient of the prestigious American Medical Association's Physician Recognition Award. In addition to publishing *Heart, Health & Nutrition*, he has written or contributed to more than a dozen books. His book titles include *Reverse Heart Disease Now* (Wiley, 2008), *The Sinatra Solution: Metabolic Cardiology* (Basic Health, 2008), *Lower Your Blood Pressure in Eight Weeks* (Ballantine, 2003), *Heart Sense for Women* (Plume, 2001), and *Heartbreak & Heart Disease* (Keats, 1996).

Note: Stephen Sinatra, M.D., has extensive experience in the areas of preventive medicine and natural healing. The alternative therapies in this report have met stringent criteria for safety and effectiveness; however, they have not been reviewed by the Food and Drug Administration. The recommendations in this report are not intended to replace the advice of your physician, and you are encouraged to consult competent medical professionals for your personal health needs.

Introduction

Dear Reader,

You don't need me to tell you how frustrating and uncertain life can be with heart disease. You already know.

Rest assured that you're not alone. I've seen thousands of patients full of anger over limitations on their activities, depressed that "life just isn't what it used to be," and fearful that they could have a heart attack or stroke at any moment. And that's understandable. After all, it's your heart we're talking about—you can't live without it.

The statistics certainly aren't going to help your outlook, either. You may have heard that cardiovascular disease (CVD) is the number one killer of both men and women in the US. According to the most recent data available from the Centers for Disease Control, CVD accounted for 1 of every 2.8 deaths in 2005. Nearly 2,400 people die of CVD every day—or *an average of one death every 36 seconds*.

Yet for each person who dies of CVD, there are hundreds more with the same diagnosis who are living vibrant, fulfilling lives. As you'll learn in this report, millions of people have diagnosed cardiovascular conditions, including what I consider to be the top five most deadly: coronary artery disease, angina, arrhythmia, atrial fibrillation, and congestive heart failure. Many of them have survived either a heart attack or a stroke. And many of them are enjoying the same activities as they did before their diagnosis.

I believe there are two reasons these people are thriving. First, they recognize that CVD is not a death sentence—it can be overcome. Second, they found a better, more effective way to treat it.

You see, conventional medicine's approach to treating these conditions focuses on treating the symptoms, not the patient. I recognized this a long time ago when I discovered that conventional medical treatments could save a patient's life but did very little to actually restore their health. I saw firsthand how cardiovascular medications could have side effects that were as debilitating as the conditions they were prescribed to treat, and how some of the traditional ways of thinking about disease were flawed. Soon I began exploring alternative therapies and found that they could not only treat the symptoms people were experiencing, but transform their lives.

The results I've seen in using alternative therapies have been nothing short of amazing. No matter what kind of cardiovascular problem you have, you can improve your health and even reverse your condition by using targeted alternative therapies. That's why I've written this brand-new, critical report—to share these therapies with you so that you, too, can reclaim your health and your verve.

Specifically, I'm going to talk about the integrative approach to healing, which combines standard treatments with proven, alternative therapies. I know you want what works—what will stop the shortness of breath, stop the sudden tightness in your chest, and stop the unavoidable anxiety and fear that occur whenever these symptoms come on. You want to get off side effect-riddled medications. You want safe, successful, and natural healing treatments that will help you regain control over your life.

This report gives you my action plan for treating coronary artery disease (atherosclerosis), angina, arrhythmia, atrial fibrillation, and congestive heart failure. It also features my approach to treating and preventing heart attacks and strokes. Although you'll find that, in some cases, you can't avoid conventional treatments, there isn't any cardiovascular condition that can't be helped by using the right targeted alternative therapies. As you'll see, these include time-tested lifestyle choices such as

proper diet, regular exercise, and stress reduction. But the cornerstone of my action plan for treating heart disease requires adding a few targeted nutritional supplements that are specifically beneficial to the heart.

The Secret's in the Cell

At the root of all heart disease is the depletion of energy in the individual cells that make up the heart muscle—and the key to overcoming your condition is to restore peak energy production (metabolism) in the cells. In fact, I've coined the term “metabolic cardiology” to describe this type of treatment of cardiovascular disease.

Let me explain. The body's basic cellular fuel is called adenosine triphosphate (ATP). Without enough ATP, cells can't function at optimum levels—and nowhere is that more apparent than in the energy-guzzling cells of the heart. Faulty ATP metabolism in the heart compromises heart function and therefore can significantly compromise your quality of life. There are four nutrients that are essential for the production of ATP: coenzyme Q10 (CoQ10), L-carnitine, magnesium, and d-ribose. I refer to them as my “Awesome Foursome” because they are nothing less than that when it comes to the prevention and treatment of CVD. I recommend them to all heart patients, along with additional supplements that address their specific health concerns (more on these as we go).

Taken together, CoQ10, L-carnitine, magnesium, and d-ribose boost ATP production and energize the heart—as well as the rest of you. These supplements work like a rocket booster for low-energy patients who don't feel like exercising or engaging in other activities (though for optimum benefit, you should). Patients with problems like angina, arrhythmia, and congestive heart failure have told me they feel much better when they're taking these supplements.

How to Use This Report

I've divided this report into sections that address all aspects of overcoming heart disease. Part I includes chapters that address coronary artery disease, angina, arrhythmia, atrial fibrillation, congestive heart failure, heart attack, and stroke. In each of these chapters, I'll explain what causes the condition, touch on traditional therapies and their drawbacks, and then outline my specific recommendations for alternative therapies that I've used to successfully treat these conditions.

In Part II, you'll find in-depth explanations of traditional therapies, their side effects, and my take on using when it's best to use them and when they're not needed. The last chapter in Part II provides an overview of the medical tests you should have and why they're an essential part of your wellness. For more detail on the lifestyle recommendations that are critical to the alternative approach (diet, exercise, and stress reduction/mind-body balance), you should refer to Part III of the report.

Keep in mind that everything I've included is a therapy that I've seen work in many, many patients over 35 years—some of them just like you. They thrived, and you can, too.

Best of health,

Stephen Sinatra M.D.

**PART I: SPECIFIC
CARDIOVASCULAR
CONDITIONS**



CHAPTER 1: CORONARY ARTERY DISEASE



Ilead off this report with a discussion of coronary artery disease (CAD) because so many of you are affected by it. CAD is by far the most common cardiovascular condition. You may have heard of the term atherosclerosis, which refers to the buildup of plaque in the blood vessels. Essentially, CAD is a form of atherosclerosis that affects the arteries leading to the heart. As plaque in the coronary arteries builds up and blockages grow, the level of oxygen and nutrients provided to the heart decreases, limiting the heart's effectiveness. Should an artery become blocked completely—due to plaque buildup or the inability of a clot to pass through the narrowed opening—a heart attack results. The alternative treatments I recommend for CAD are effective for preventing these blockages and reversing plaque buildup in the coronary arteries.

How do you know if you have CAD? Shortness of breath and angina (chest pain) are typical symptoms reported (for more on angina, see Chapter 2). However, up to 50 percent of the time, the first symptom of disease is sudden cardiac-related death. Talk to your doctor if you have circulatory problems in other parts of your body, as they can sometimes be a warning that circulation through the coronary arteries is becoming a problem as well.

What Causes CAD?

The process through which CAD develops is complicated, but let me try to break it down for you. CAD is a result of lifestyle choices that damage the endothelial cells that line your blood

vessels. This innermost layer of cells in the blood vessels is called the endothelium, and it holds the key to vascular health. Think of the endothelium as an inner reflection of your outer self. You see, the endothelium is the “gatekeeper” that protects the blood vessels from the destructive forces of high blood pressure, high blood sugar, oxidized LDL cholesterol, stress, and environmental toxins such as cigarette smoke. Prolonged exposure to these risk factors damages the endothelium, causing the blood vessels to lose their elasticity and become prone to plaque buildup and calcification.

Clearing Up the Cholesterol Confusion

Of all the risk factors that damage the endothelium, the one that creates the most confusion is cholesterol. Mainstream medicine and the pharmaceutical industry want you to believe that cholesterol is the primary villain behind CAD. Most doctors will recommend, and even nag, that you take cholesterol-lowering statin drugs if your cholesterol numbers are high. In their minds, CAD is caused by high cholesterol.

A long time ago, I used to believe that, too. It made sense based on the research. My thinking changed when I began to see conflicting results among my own patients and in the medical research. For instance, I saw many patients develop CAD even though they had low total cholesterol—as low, in fact, as 130!

These patients were telling me something different than the establishment message—that CAD wasn't a simple cholesterol story. Other experiences reinforced my observations. In those days, we pushed people to undergo angiograms (invasive arterial catheterization imaging) if they had cholesterol levels greater than 280. Indeed, many times we saw that their arteries were diseased. But often, though, their arteries were healthy.

I soon found other doctors who had made similar discoveries, and I heard how study findings were

Did You Know?

- According to the American Heart Association, an estimated 16,800,000 people in the US have CAD.
- CAD is the leading killer among both men and women—it accounts for one of every five deaths. About 82 percent of those who die from CAD are over age 65.

being manipulated. Retired Vanderbilt University biochemist George Mann—who helped develop the world-famous Framingham heart disease study that raised interest in cholesterol—later described the cholesterol hypothesis as “the greatest scam ever perpetrated on the American public.”

However, his and other dissenting voices have been drowned out by the “cholesterol chorus.” To this day, practically all of what has been published about cholesterol—and received media attention—supports the current cholesterol paradigm.

By contrast, you don’t read much about a population study that showed how the French have the highest total cholesterol levels in Europe—about 250—but the lowest incidence of heart disease. Or how a 10-year study on the Greek island of Crete failed to record a single heart attack despite its participants having an average total cholesterol of well over 200. Then there’s the statistic that half of all heart attacks occur in people with “normal” total cholesterol.

Though you wouldn’t know it based on today’s obsession with cholesterol levels, cardiology has been slowly veering away from the narrow view of cholesterol as a primary cause of CAD. The field is realizing that although cholesterol plays a role in the biochemical process that creates damage in arterial walls—which in turn leads to plaque, occlusions, and clots—it’s a relatively minor one. In other words, they’ve realized that even though they may find cholesterol at the scene of the crime, it’s not necessarily the perpetrator.

Move Over Cholesterol, Inflammation Is Taking Over

If cholesterol is not the main culprit for the development of CAD, then what is? Inflammation has been identified as playing a central role. Cardiologists are slowly accepting that it’s inflammation of arterial tissue that leads to CAD.

Inflammation is your body’s first line of defense against injury or infection. But inflammation sometimes becomes chronic: it goes into constant overdrive and begins to cause disease

When Does Cholesterol Become a Threat?

Contrary to popular belief, cholesterol is not a villain. Your body needs cholesterol to synthesize certain nutrients and hormones, construct the semi-permeable membranes around each of the 100 trillion cells that make up your body, and facilitate cell communication and memory in the brain. Cholesterol moves through the body with the help of two proteins: LDL, or low-density lipoprotein, and HDL, or high-density lipoprotein. LDL carries ready-to-use cholesterol molecules that can be absorbed by cells that need it, and HDL picks up excess cholesterol and carries it back to the liver for recycling and excretion.

In the blood, LDL is completely safe, and it’s impossible for your cells to absorb too much of it. LDL becomes unsafe only when it interacts with molecular fragments called free radicals. The effect of such interaction is that the LDL becomes oxidized. Unlike normal LDL, oxidized LDL has toxic effects on the cells it attaches to. This is especially troublesome when oxidized LDL penetrates the endothelial cells lining the arteries because it contributes to—and accelerates—the inflammatory process. Over time, increased inflammation leads to the formation of arterial plaque.

When you get down to it, though, the real problem is not cholesterol—it’s whether your body’s antioxidant system can effectively neutralize the free radicals that damage LDL molecules.

Here’s what you need to remember about cholesterol: It’s a relative risk factor for CAD, and it’s influenced by other factors. It is not an absolute and independent risk factor in the same way that high blood pressure is.

instead of heal it. The knowledge that inflammation is a major predictor of CAD began with a landmark study showing that high levels of C-reactive protein (CRP)—one of the principal markers of inflammation—increased the risk of developing CAD.

The Harvard University Women’s Health Study, which involved some 28,000 healthy postmenopausal women, showed that subjects with the highest levels of CRP had five times the risk of developing CAD and four times the risk of having a heart attack or stroke compared with subjects with the lowest levels. CRP predicted risk of these events in women who appeared to have no other pertinent risk factors.

In the study, researchers looked at CRP and LDL cholesterol levels in women who developed CAD and put them into one of four possible categories (expressed as four quadrants on the chart):

High CRP High LDL	High CRP Low LDL
Low CRP High LDL	Low CRP Low LDL

The results were quite surprising. Most cardiologists would have expected that women with higher levels of LDL would have been at the highest risk (left quadrants). But in this study, not only was elevated CRP the best indicator of risk, women with high LDL and high CRP were also at the **most** risk. Both upper quadrants were therefore the high-risk place to be, and the left upper quadrant was the riskier of the two. This is because inflammation is prompting the LDL to oxidize and form into plaque, rather than circulate freely.

This finding is significant, folks, as this study shows once again that LDL cholesterol is not the lone culprit in CAD. In fact, this study reported that out of 12 possible risk factors including cholesterol, elevated CRP was the strongest predictor of future cardiac events for postmenopausal women.

High CRP levels also predict greater risk for men. In another study—the large Physicians Health Study—higher levels of CRP were found to predict risk for heart attack and stroke in men.

According to Dr. Paul Ridker, who led the Women’s Health Study, approximately 25 percent of the US population has elevated CRP levels, but normal to low levels of cholesterol. This means that millions of Americans may be unaware that they are at increased risk for future heart problems, even if they are routinely screened for elevated cholesterol.

For more on CRP and other markers of silent inflammation that can be uncovered through blood tests (homocysteine, Lp(a), fibrinogen, serum ferritin, and interleukin-6), see Chapter 10.

The Role of Nanobacteria

One cause of the inflammation that leads to the development of CAD is nanobacteria. Nanobacteria (*Nanobacterium sanguineum*) are so minute that they eluded researchers for decades. They’re 1/1,000 the size of normal bacteria and, until recently, nobody believed that something so small could even be alive. It turns out that nanobacteria are not only very much alive, but they’re thriving, and they are damaging our health in more ways than we could ever have dreamed.

Two Finnish researchers discovered nanobacteria in 1988 when they examined a hardened film that had formed on the surfaces of some dead cell cultures. The researchers found that nanobacteria banded together to secrete a toxic film. Eventually, this film hardens into a calcified shell, protecting the nanobacteria colony from our body’s attempts to clear it out.

The biofilm phase of nanobacterial life is one of the most damaging to human bodies, because the biofilm is a potent toxin that causes the body to react powerfully with irritation and swelling. Though the “bugs” themselves cause damage, even more is caused by the body’s reaction to them. The body’s defenses trigger several medical markers of inflammation, including CRP discussed in the previous section, which helps explain why elevated CRP levels are a major harbinger of CAD.

Scientists from the Hungarian Academy of Sciences reported finding nanobacteria in more than 60 percent of human artery-clogging plaques studied.

Eradicating Nanobacteria

Nanobac Pharmaceuticals, in Tampa, Florida, conducted research with a therapy that has been instrumental in killing nanobacteria and, along with that, reversing plaque. Over several months Nanobac researchers performed a pilot study of 91 patients using the following protocol on a daily basis:

- 500 mg oral tetracycline,

Watch Out for These True Risk Factors

More important than cholesterol are risk factors that ignite and feed the body's inflammatory response. I call them the "dirty dozen":

Excessive insulin. The pancreas secretes insulin, which moves blood glucose into cells. When insulin levels are chronically high, a chain reaction of biochemical developments can lead to arterial inflammation.

Toxic blood. This describes blood containing elements that either contribute to, or indicate, inflammation or plaque buildup. These include (1) elevated homocysteine; (2) Lp(a), the inflammatory subtype of LDL; (3) C-reactive protein (CRP), a key indicator of inflammation and chronic infection in the body; (4) excess fibrinogen, a protein that helps regulate the clotting process; and (5) excess ferritin (iron), which contributes to arterial toxicity and cholesterol oxidation.

Emotional stress. Stress hormones promote arterial constriction, high blood pressure, increased heart rate, cholesterol oxidation, and blood clotting. Acute stress, such as anger, can cause heart attack or stroke.

Oxidative stress. Unchecked free-radical activity accelerates age-related degenerative diseases. Free radicals are generated by smoking, high sugar intake, excessive physical or emotional stress, heavy metal toxins, radiation, trans fats, and some drugs.

Poor bioenergetics. Bioenergetics refers to the ability of cells to generate and use energy, and it often falters in patients who have heart disease. That's why I always recommend heart patients supplement with my "Awesome Foursome" of CoQ10, magnesium, L-carnitine, and D-ribose.

Micro-organisms. Bacterial infections spread germs and generate inflammation in the body. A common source of such bacteria is gum disease. Nanobacteria (1/1,000 the size of regular bacteria) is a particularly strong risk factor.

Toxic metals. Mercury and lead are the most infamous toxic metals that can contribute to inflammation by poisoning enzyme systems, elevating blood pressure, and damaging arterial walls.

Hormones. A woman's own estrogen has cardioprotective benefits. As we age, and our hormone levels decline, it makes sense that our risk of atherosclerosis and clots rises. Moreover, synthetic hormone replacement therapy can put women at higher risk of heart attack and stroke.

Trans fatty acids. The unnatural trans fatty acids used in processed foods ignite inflammation, raise Lp(a), promote cholesterol oxidation, and lower HDL.

High blood pressure. High blood pressure damages arterial walls, leading to arterial damage and atherosclerosis. It can also enlarge the heart, creating an extra oxygen demand.

Radiation. X-rays and other medical procedures that use radiation have the potential to damage the sensitive lining of arterial walls.

Genetics. Research is beginning to reveal specific information about one's predisposition to cardiovascular disease. Ask your cardiologist about available tests if you have concerns.

- 1,500 mg EDTA rectal suppository (EDTA is a weak synthetic amino acid that works as a chelating agent to gradually infiltrate mineral deposits and pull them away from the cardiovascular system), and
- A mixture of compounds taken by mouth that retards the excretion of EDTA.

The premise is as follows: Tetracycline is the only antibiotic known to kill nanobacteria, but it needs a way to infiltrate their calcified shells. Enter EDTA chelation, which is used to "fluff up" plaque, allowing tetracycline access to the bacteria. The additional oral powder keeps the EDTA in your bloodstream longer, so the

tetracycline has more time to eradicate the bacteria.

Of the 91 participating patients, the mean decrease in their coronary artery calcification scores was 58.5 percent after treatment for three months. Interestingly, in 19 of those 91 patients, 100 percent of coronary artery calcification was eradicated.

A minimum of four months of treatment is necessary to treat many folks with coronary artery calcification. For those whose plaque burden is excessive, nine, twelve, or more months may be needed.



Traditional Therapies

Medication. One of the main goals of CAD medication is to protect the heart muscle from the effects of diminished oxygen supply. This is accomplished by lowering one's blood pressure or heart rate—thereby reducing the heart's oxygen requirements. Some of the commonly prescribed medications include:

- Beta blockers
- Calcium channel blockers
- ACE inhibitors
- Blood thinners such as aspirin

Also commonly prescribed for those with CAD are cholesterol-lowering statin drugs. Although I don't believe in using statins solely to treat high cholesterol when there is no evidence of CAD, I endorse statin therapy when direct measures need to be taken to limit inflammation in anyone with documented CAD. Research has shown that statins can reduce cardiovascular events and improve survival rate of those with CAD.

For more information about these medications and their side effects, see Chapter 8.

Surgery. The most common surgical interventions for CAD are coronary artery bypass and angioplasty/stent insertion.

Coronary artery bypass is open heart surgery that is necessary if the left main coronary artery is blocked more than 70 percent or there is 90–95 percent blockage of two or more other major coronary vessels. A bypass also may be warranted if surgery is the only alternative for diminishing your symptoms. But bypass surgery is not a cure for CAD. If you undergo bypass surgery, recognize it for what it is: an opportunity to escape your symptoms while you change your lifestyle and take responsibility for healing yourself.

Angioplasty/stent insertion is a procedure that involves inserting a catheter in a blood vessel in the groin, threading it through the femoral artery and into the chest until it reaches the point of blockage, inflating a tiny balloon to flatten the blockage, and then placing a stent there to keep

the artery open. Although the procedure can be a lifesaver for those with an impending heart attack or advancing unstable CAD, most of these procedures are performed in non-emergency situations simply to open a clogged blood vessel and relieve chest pain in stable patients—and I've never considered that approach to be smart medicine.

For more information about coronary artery bypass and angioplasty/stent insertion, see Chapter 9.



Alternative Therapies

The first step in your action plan for treating CAD is to live a lifestyle free of the risk factors that increase the likelihood that you'll be affected. By that, I mean avoid smoking, eat an anti-inflammatory diet, keep your blood sugar low, maintain a healthy weight, and manage your stress. These same lifestyle changes can also help you maintain the best possible quality of life should CAD affect you. There are also several nutritional supplements that can help retard progression of, and even reverse, CAD. Here are my specific recommendations.

Diet

What you eat has a direct effect on your cardiovascular system. That's why you should avoid sugar, sodas, sweets, refined carbohydrates, and trans fats (e.g., fried foods, partially hydrogenated oil) as much as possible. They are, without a doubt, the biggest enemies of a healthy cardiovascular system because they ramp up the level of inflammation in your body. Fortunately, what you eat can also help to reduce inflammation.

After a great deal of research, I've concluded that the best overall diet for your heart and arteries combines a high-fiber, healthy-fat, Mediterranean-type diet with traditional Asian cuisine. I call this approach to eating the Pan-Asian Modified Mediterranean (or PAMM) diet. This diet, which is high in vegetables, legumes, fruits, fish, garlic, nuts, olive oil, and soy products, helps lower cholesterol, promotes weight loss, and prevents spikes in insulin, which can cause artery-damaging inflammation. For more about the PAMM diet, see Chapter 11.

Nutritional Supplements

After you make some dietary and other lifestyle changes, the next step in your action plan should be to add some nutritional supplements to your daily regimen. Research has confirmed that the following nutrients are effective in treating CAD. All of these supplements have merit, but the most critical supplements that anyone with CAD should take are the “Awesome Foursome” supplements I mentioned in the Introduction (CoQ10, L-carnitine, magnesium, and D-ribose), and fish oil.

CoQ10

Coenzyme Q10 (CoQ10) is a key ingredient in my core nutritional program for healing all cardiovascular conditions, including CAD. I simply would not practice cardiology without it. Often called the “miracle nutrient” or the “universal antioxidant,” CoQ10 exists in the mitochondria—or power plants—of our cells, and scavenges and destroys free radicals that cause cardiovascular disease. Hundreds of studies have documented the actions of CoQ10 on improving heart health.

As I explained in the Introduction, CoQ10 molecules perform a vital role in the production of the body’s basic cellular fuel, ATP. This is the key reason CoQ10 is probably the single best nutrient you can take for your heart. Your heart muscle consumes huge amounts of oxygen and energy. CoQ10 essentially recharges the energy system in the heart, enabling the heart muscle to pump blood more efficiently. At the same time, CoQ10 cleans up destructive free radicals that are byproducts of the energy production process.

Because your levels of CoQ10 decrease as you age and you get insufficient amounts of CoQ10 from your diet, I’m a firm believer in taking a CoQ10 supplement. I recommend taking 100–300 mg of CoQ10 daily if you have CAD. For best results take CoQ10 in divided doses with your meals. It’s more readily absorbed with food (especially some fat).

The form of CoQ10 you take also affects how well it’s absorbed. Because supplements made with poor bioavailable forms of CoQ10 generally

have low absorption rates, I prefer a form that is hydrosoluble (either water or fat soluble). Research confirms that hydrosoluble CoQ10 is the most bioavailable, enabling the nutrient to reach much higher levels in the blood. Hydrosoluble CoQ10 can be found in health food stores.

L-Carnitine

L-carnitine, a water-soluble nutrient produced from the amino acids lysine and methionine, is found in all living tissue. Like CoQ10, the primary role of L-carnitine is to create ATP. L-carnitine transports fatty acids into mitochondrial membranes, where they are converted into ATP.

L-carnitine is particularly helpful in the treatment of CAD. It helps deliver extra oxygen to blocked arteries. L-carnitine also prevents the production of toxic fatty acids. These malicious byproducts not only cause severe oxidative stress and damage cell membranes, over time they can also create changes throughout the heart that contribute to atherosclerosis. L-carnitine can also help circulation problems; it improves blood flow by supporting better use of oxygen in the tissues.

Supplemental L-carnitine comes in a number of forms. Any of them would be beneficial, but I prefer broad-spectrum products that incorporate all forms of the nutrient: L-carnitine fumarate, acetyl-L-carnitine, and propionyl-L-carnitine. Take 500–1,000 mg two to three times daily (total daily dosage: 1–3 grams). Start at the low end of the dosage scale and work up until you achieve the desired effect. Like CoQ10, L-carnitine may require fine-tuning to obtain the optimal therapeutic blood level.

Magnesium

Magnesium is essential to healthy heart function, yet low magnesium is one of the most underdiagnosed electrolyte abnormalities in clinical practice today. Magnesium is often depleted in those with CAD. Like CoQ10, magnesium is crucial to produce the high-energy bonds that drive the energy machinery of your cells. Your cells need a steady supply of magnesium to maintain proper smooth muscle function in your blood vessels.

Perhaps the best indication for magnesium is in treatment of high blood pressure. There is a direct relationship between low magnesium and high blood pressure. Over time, low magnesium levels may predispose the interior of your vessels to contract (go into spasm); eventually, high blood pressure can result. Magnesium can come to the rescue of contracted blood vessels and even reverse some of the damage.

To replenish low magnesium levels, take 400–800 mg of magnesium daily. Although magnesium oxide is a common form used in many supplements, I have found it is not easily soluble or well absorbed by the body. I recommend malate, citrate, glycinate, or glucuronate forms of magnesium, or a broad-spectrum product that contains a variety of these forms.

D-Ribose

D-ribose (or ribose) is a naturally occurring sugar derivative of ATP, and over the last few years it's received special interest as a metabolic support for the heart. Investigators believe that under certain cardiac conditions—especially during ischemic episodes like angina and heart attack when the heart is deprived of oxygen—there's a profound depression of high energy compounds like ATP. With a drop in ATP, the heart struggles to pump.

A decrease in blood-borne oxygen (called ischemia) may cause the heart to lose up to half of its ATP production ability. Even if blood flow and oxygen are restored to normal levels, it can take up to ten days for an otherwise healthy heart to rebuild cellular energy stores and normalize diastolic cardiac function. However, when oxygen-starved hearts receive supplemental D-ribose, energy recovery and diastolic function return to normal in an average of 1.2 days!

Depending on the severity of your condition, I recommend taking 10–15 grams of D-ribose in divided doses, two to three times daily. The powder is sweet and can be easily mixed with a beverage. I like it in ginger tea or green tea, but my wife prefers it in her yogurt. A good D-ribose

product is Corvalen, which you can order from www.bioenergy.com or call 866-267-8253.

Fish Oil

European doctors embraced using fish oil to treat CAD based on the results of a study conducted at multiple medical centers in Italy (called the GISSI trial), which followed for three and one-half years over 11,000 Italians who had suffered heart attacks. The study found that those who took one gram of a fish oil supplement daily had a 45-percent reduction in the risk of sudden cardiac death. If you already know you have arterial plaque, you need at least one gram of fish oil daily to prevent sticky platelets from grabbing a free ride, and possibly causing a rupture.

I've been using fish oil for many years in my practice. It's one supplement that I regard as absolutely essential for cardiovascular health because the omega-3 fatty acids in fish oil do so many great things in the body. Here's a short list of the benefits:

- Decreases elevated triglycerides and blood pressure
- Reduces arterial wall inflammation
- Improves endothelial function
- Makes blood less sticky and less likely to form clots
- Stabilizes plaque, and may help prevent plaque rupture
- Contributes to the bioenergy of the heart muscle

There are a lot of fish oil supplements out there; it's important to choose a quality product. Because our ocean waters are getting more polluted, fish can be contaminated with heavy metals and toxic chemicals. Also, the large factory ships that catch the fish don't do a very good job of processing them right away, which means oils can oxidize even before they're put into capsules. Look for a fish oil product that can guarantee freshness, preferably one that includes antioxidants such as rosemary extract and vitamin E to ensure stability and freshness. For treatment of CAD, take 2–4 grams daily.

Vitamin K2

Vitamin K was discovered in Denmark, and the designation “K” is derived from the Danish word koagulation. You’re probably most familiar with K1, found in green leafy vegetables, which plays a vital role in the clotting of blood. K2 (short for menaquinone) is less abundant and somewhat harder to find. Both K1 and K2 are important for the health of arterial tissue, but K2 is the more beneficial of the two nutrients. Animal research has shown that K2 has the ability to reduce calcium buildup in arteries.

Human studies have also confirmed the importance of vitamin K2 for arterial health. In one study, Dutch researchers examined the food intake and aorta scans of 4,800 elderly Dutch men and women over a 10-year period. (The aorta is the largest artery in the body, and the condition of the aorta serves as a good indicator of arterial disease.) Their investigation showed that those who ingested the most K2 in their diets—mostly obtained from cheese—had the least calcified aortas. The higher the intake of cheese, the less cardiovascular mortality and atherosclerosis the researchers found.

Eating cheese to protect against arterial calcification is a mind blower for cardiologists, who tend to steer people away from cheese because of its saturated fat content. Stick with a low-fat cheese; you’ll get less fat but still get the K2.

I also recommend taking a K2 supplement. When you shop for a K2 product, be sure that it’s derived from menaquinone-7 (MK-7) and not from menaquinone-4 (MK-4). MK-7 products are more easily absorbed by the body—and more effective. My recommended dosage had been 150 mcg a day, but animal studies and ongoing investigations suggest that a higher dosage is needed to reduce arterial calcification, so I now recommend that CAD patients take 300 mcg a day.

⚠ Caution: If you are taking the blood-thinning drug Coumadin (warfarin), don’t take a K2 supplement. Vitamin K and Coumadin are antagonistic, that is, they counteract each other, and a

K2 supplement might neutralize the effect of the drug. I advise my patients taking Coumadin to be sure to add green leafy vegetables, as well as low-fat cheese and natto (see below) to their diets so that they don’t become vitamin K deficient.

Nattokinase

Nattokinase is an enzyme derived from natto, a traditional Japanese soybean dish. Natto is made by boiling or steaming soybeans and then fermenting them. The process yields a dish that Westerners don’t find particularly appealing. Taste aside, natto is probably one of the world’s healthiest foods. Besides being the source of nattokinase, natto also contains the highest concentration of vitamin K2 of any food.

Nattokinase helps address one of the most overlooked problems in the development of CAD: hyperviscosity, which refers to thick and sticky blood that moves slowly through the circulatory

Another Anti-Inflammatory Superstar

Delta tocotrienol is a vitamin E compound that has tremendous value in the treatment of CAD. Vitamin E supplements usually contain only the tocopherol compounds (most notably alpha tocopherol), and tocopherols have been found to help reduce the oxidation of LDL cholesterol. But research suggests that tocotrienols may be superior to the tocopherols in modifying the oxidation of LDL cholesterol. Tocotrienols—particularly the delta form—also have been found to lower LDL levels (something the tocopherols can’t do).

What really turns me on about delta tocotrienol are its anti-inflammatory and anti-atherosclerotic effects. Specifically, delta tocotrienol may lower Lp(a), the most inflammatory cholesterol particle, as well as inhibit the activity of adhesion molecules—sticky substances produced by arterial tissue in the early stages of atherosclerosis.

Although I continue to recommend 200 IU of vitamin E, I don’t suggest taking a broad spectrum vitamin E supplement containing both tocopherols and delta tocotrienol. Research has found that tocopherols interfere with the metabolism of tocotrienols and thus may reduce delta tocotrienol’s ability to lower LDL and Lp(a). So, it’s best to take tocopherols and delta tocotrienol separately and not at the same time (8–12 hours apart). For CAD, I recommend taking 100 mg daily of delta tocotrienol.

system. Hyperviscosity feeds the inflammatory process that damages arteries. Sluggish blood flow also increases the risk of clot formation.

Enter nattokinase. It reinforces the actions of plasmin, your body's own enzyme that breaks down the body's clotting agent called fibrin, thereby preventing abnormal thickening of the blood.

Because of its clot-busting and blood-thinning properties, nattokinase is used to treat CAD and prevent heart attack and stroke. I also recommend it to any of my patients with high blood pressure. You can buy nattokinase at most any health food store. Start at 50 mg a day and increase the daily dosage to 100 mg after a week.

Lumbrokinase. Also of Asian origin, the enzyme lumbrokinase is derived from an extract of earthworm. Like nattokinase, lumbrokinase neutralizes fibrin in the body, thus preventing blot clots from forming and dissolving existing clots. A therapeutic dosage is 20 mg capsules taken on an empty stomach three times a day. Lumbrokinase is marketed by Canada RNA (www.canadarna.com).

⚠ Caution: You should not take nattokinase or lumbrokinase if you're taking the blood-thinning drug Coumadin because the combination may result in your having too little fibrin to form any clots at all, putting you at risk for bleeding events. But I don't see any problem taking nattokinase while taking low-dose aspirin (81 mg), since aspirin causes the platelets in your blood to be less sticky, which is a different action than the one caused by Coumadin. Another precaution: If you're taking nattokinase, limit your fish oil intake to no more than 3 grams per day because fish oil also makes blood less likely to form clots.

B Vitamins

The B vitamins and folic acid play an important role in addressing CAD. One of the toxic blood risk factors I mentioned is homocysteine, an amino acid that causes your body to lay down sticky, artery-hardening platelets in blood vessels. Vitamins B6, B12, and folic acid function

to reduce homocysteine. I recommend taking 800 mcg of folic acid, 40 mg of vitamin B6, and 200 mcg of vitamin B12 daily.

Vitamin B3 (Niacin) is an essential supplement when you have CAD. Niacin lowers smaller LDL cholesterol particles but, more importantly, it raises larger HDL cholesterol particles, and lowers triglycerides and the very dangerous cholesterol component Lp(a). For me, keeping HDL levels high and Lp(a) down are more significant than lowering LDL or even total cholesterol. Lp(a) contributes to inflammation and plaque buildup, and increasing HDL levels can lead to plaque regression.

When you take niacin, you'll likely experience a tingly, pins-and-needles, sometimes hot, flushing of the skin. This typically lasts no more than a half-hour to an hour. The higher the initial dose, the greater the initial flushing effect. My recommendation is that you start with 250 mg of niacin three times daily, and slowly work up to 1–3 grams in divided doses three times a day.

External Enhanced Counterpulsation Therapy (EECP)

In addition to the dietary and supplement recommendations I just shared with you, there is another therapy that offers hope to those with advanced CAD who can't undergo bypass surgery. This therapy is called enhanced external counterpulsation (EECP).

EECP is a noninvasive procedure involving a pair of inflatable pants that surround your lower extremities. When the heart is relaxing in the phase that physicians call diastole, a cuff inflates, increasing the pressure in the aorta, encouraging more blood to backfill the coronary arteries, and stretching them as they fill.

The machine includes three pressure bladders sewn inside five cuffs that are timed to inflate in synchrony with your heartbeat. Two cuffs surround each calf, two enclose each thigh, and the last set encircles the buttocks. There are sensors to detect the heart rhythm and blood oxygen level, and the machine makes a thumping sort of rushed-air sound as the cycle

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starts from your calves upward toward your heart. As the sensors detect an oncoming heart-beat, it deflates the cuffs, creating a vacuum that makes it easier for your heart to pump out the next contraction.

As more blood flow is milked back into coronary circulation, oxygen-rich blood is distributed to vital heart muscle, decreasing what cardiologists call “afterload,” or the work assumed by the heart during the relaxation stage in between heartbeats. When this happens, the heart muscle’s oxygen utilization is temporarily improved. Dr. Jueteronke, a Colorado Springs doctor using this technology, reports that the arteries are gently stretched, just like squeezing a long balloon, and that this process promotes the development of collateral circulation in most people.

Studies have shown that EECP does indeed work, and is particularly effective for patients with advanced CAD and no other treatment options. Several of these folks are not suitable candidates for angioplasty or coronary artery bypass surgery, despite their advanced CAD. Many also have a coronary anatomy that has failed to improve following bypass or PTCA (angioplasty).

Patients generally undergo EECP treatments several days a week for several weeks. The protocol requires five days a week for seven weeks, and the sessions last three to four hours.

⚠ Caution: You should not use EECP if you have a ventricular aneurysm or uncontrolled arrhythmia (particularly atrial fibrillation or multiple premature ventricular ectopic beats), uncontrolled high blood pressure or aortic valve regurgitation, thrombophlebitis (venous blood clots), peripheral vascular disease in the legs, or previous leg amputation. Further, the procedure should not be done during pregnancy or the period immediately following cardiac catheterization or bypass surgery. Patients taking Coumadin also cannot go through EECP.

If you think you’re a candidate for EECP, talk to your physician about investigating this therapy in your area. You can contact the EECP equipment manufacturer, Vasomedical, Inc. (www.vasomedical.com or 800-455-3327) for information on practitioners.

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CHAPTER 2: ANGINA

If you've ever had a burning or crushing pain in your chest triggered by exercise or even just walking up a flight of stairs, this could be a signal that you have angina. Pain that begins in the shoulder and radiates up the neck, across the back, or down the left arm is also a sign of angina. Less common symptoms include throat tightness or pain in the jaw, back, or forearms.

What Causes Angina?

As I mentioned in Chapter 1, angina is often a symptom of coronary artery disease because angina is caused by oxygen deprivation in the heart muscle usually as a result of blockages due to plaque buildup in the coronary arteries. As the blockages increase in size over time, they crowd the artery opening, and limit the flow of oxygenated blood to the heart. The lack of oxygen to the heart muscle causes the muscle to drain its energy reserves, resulting in numbness and pain. Another symptom of angina is shortness of breath, as the body attempts to pull in more oxygen to compensate for the shortage.

What triggers angina? Common culprits include physical exertion (strenuous exercise or other type of physical activity), emotional stress, or extreme temperatures (intense cold or excessive heat). Angina can occur in any situation in which the heart needs more oxygenated blood. Occasionally, a coronary artery spasm will occur that shuts off the oxygen supply to the heart. A coronary artery spasm can trigger angina symptoms in the absence of external stressors.

There are two types of angina: stable and unstable. Stable angina refers to episodes of angina that are predictable. Symptoms will occur at a certain level of exertion or particular heart rate elevation when there is an increased oxygen demand by the heart. Someone with stable angina will generally know that particular activities or stressors will trigger symptoms. In fact, stable angina is reproducible through an exercise

stress test. The symptoms will be relieved by rest and/or medication like nitroglycerin.

On the other hand, the term unstable angina is used to describe episodes that aren't predictable. Unstable angina occurs more frequently, lasts longer, and can occur even during rest or sleep when there is no extra oxygen demand on the heart. When I see a patient with unstable angina, I'm worried, because the randomly varying nature of symptoms puts him or her at risk for a heart attack. In these cases, I frequently employ aggressive medical therapy and hospitalize the patient to stabilize the angina. And be aware: Stable angina can become unstable for any reason, literally overnight, so even if you've been diagnosed with stable angina, you must remain vigilant.



Traditional Therapies

Traditional therapies focus on increasing blood flow to the heart and raising what is known as the patient's anginal threshold or the point at which symptoms are triggered. This is done primarily with medication, but, as in the case of coronary artery disease (CAD), occasionally the arteries are so blocked that surgical interventions are necessary.

Medication. Many of the same medications I mentioned for treating CAD (calcium channel blockers, beta blockers, ACE inhibitors, and aspirin) are used to treat angina. Some of these drugs reduce the heart's workload and oxygen demand by lowering blood pressure or heart rate. Other drugs work by relaxing blood vessel walls, preventing coronary artery spasms, and improving blood flow. Nitroglycerin is another drug used to help keep arteries dilated and

Did You Know?

- According to the American Heart Association, angina affects an estimated 9,800,000 people in the US.
- About 500,000 new cases of stable angina occur each year.

discourage dangerous spasms. Nitroglycerin offers immediate relief for angina symptoms, and some patients use nitroglycerin prior to activities that may trigger these symptoms. For more about these medications, see Chapter 8.

Surgery. Angioplasty with stent insertion is the procedure most frequently used when arteries are so blocked that blood flow needs to be restored more directly. Doctors often recommend this procedure when plaque buildup in the coronary artery begins to cause chest pain. They maintain that a stent will reduce the likelihood of a major cardiovascular event in the future. Although angioplasty with stent insertion can be a lifesaver in cases of unstable angina, more often than not, angioplasty is employed in non-emergency situations to relieve chest pain in those with stable angina. Research has shown that angioplasties provide very little benefit to patients with stable angina. For more about angioplasty/stent insertion, see Chapter 9.



Alternative Therapies

Both drugs and surgery have their place in the treatment of unstable angina, but medications can have unpleasant side effects, and some folks just aren't suitable candidates for surgical interventions. That's why I'm a firm believer in nutritional supplements as the key element in your action plan for treating angina. Nutritional supplements can help offset medication side effects, offer extra protection should you have surgery, and may be just what you need to get your angina symptoms under control.

Another alternative therapy for angina that I told you about in Chapter 1 is EECF. I have recommended EECF to patients who have symptoms of angina pectoris and fail to respond to combination medication therapy or appropriate nutritional supplements.

Also, as I mentioned in Chapter 1, I recommend the protocol for killing nanobacteria for those with angina who have a poor quality of life and who are running out of options.

Quick Tips for Easing Angina Pain

If you suffer with angina pain, here are two easy things for you to try. First, raise the head of your bed three to four inches. Sleeping in this position makes more blood pool in your legs, so it doesn't go to the heart's narrowed arteries. Second, if you get an angina attack at night, sit on the edge of the bed with your feet on the floor. It's just like taking nitroglycerin. Of course if your symptoms don't subside quickly, take your nitroglycerin as directed.

Nutritional Supplements

Because angina is most often a symptom of CAD, the supplements I recommend for CAD in Chapter 1 should also be used in treating angina. The following three nutrients have been found particularly helpful in relieving angina symptoms.

L-Arginine

My interest in this amino acid began more than 10 years ago when I saw a clinical study that demonstrated its ability to improve blood flow in the coronary arteries. Research has shown that in intravenous or supplement form, L-arginine supports your body's production of nitric oxide. This compound promotes better blood flow by relaxing and dilating the blood vessels. The medication nitroglycerin that I mentioned as a traditional treatment for angina is simply a drug form of nitric oxide.

Nitric oxide is produced by the endothelial cells lining the blood vessels. Production of nitric oxide declines as we age, and this deficiency permits blood vessels to constrict and lose their flexibility, leading to hypertension, inflammation, and plaque buildup. By supporting the production of nitric oxide and reducing endothelial dysfunction, L-arginine can relieve symptoms of coronary artery spasm and help stabilize angina, decreasing the frequency of angina attacks and the need for nitroglycerin.

L-arginine is found in dairy products, meat, poultry, fish, nuts, and seeds, but it's difficult to get sufficient amounts of L-arginine from diet alone. That's why I recommend L-arginine supplementation. L-arginine comes in capsule or

tablet form; take 2–3 grams three times daily to relieve angina symptoms.

L-Carnitine

L-carnitine is beneficial in angina because it improves overall oxygen utilization by the heart cells. Starved heart muscle cells need to use their limited oxygen supply more effectively, and carnitine helps reduce the oxygen demand by allowing the heart to efficiently burn its primary fuel, fatty acids.

Because angina symptoms are usually triggered by an increase in physical workload, a great way to study the impact of L-carnitine on angina is to use exercise testing. In one study, a dose of 900 mg of L-carnitine was associated with an improvement in exercise tolerance in patients with stable angina. The average exercise time before an EKG showed evidence of angina was 6.4 minutes when patients were on placebo treatment. This was extended to an average of 8.8 minutes after 12 weeks of L-carnitine treatment (an increase of 2.2 minutes on a stress test is a long time). In addition, of the 12 patients who experienced angina during the placebo period, two of them were angina free at the end of L-carnitine treatment period.

I have long been a fan of L-carnitine for angina. Firsthand experience with patients makes me a true believer in its ability to help keep people healthy and improve their quality of life. As in the case of CAD, I recommend taking 500–1,000 mg two to three times daily (total daily dosage: 1–3 grams). Start at the low end of the dosage scale and work up until you achieve the desired effect. Some research suggests that L-carnitine is even more effective when taken with CoQ10 (which has also been found to increase exercise tolerance and decrease the frequency of angina attacks).

Hawthorn Berry

Hawthorn berry (*Crataegus monogyna*) is an herb I use frequently in my cardiology practice. A member of the rose family, hawthorn is a small, thorny shrub with colorful flowers and red fruits resembling miniature cherries. Its leaves, flowers, and berries contain a number of biologically active

substances, including oligomeric proanthocyanidins, flavonoids, and catechins. This herb has acquired a reputation (especially in Europe) as a remedy for a number of cardiac conditions.

Studies have indicated that hawthorn exhibits vasodilatory reaction, which means it increases blood flow and improves circulation in smaller vascular blood vessels. This in turn increases blood flow to the heart, allowing the heart to pump with more ease. For this reason, it may help prevent angina.

Hawthorn can be taken as a tea, tincture, or in capsule or tablet form, all of which are available in health food stores. The brand of hawthorn I use and recommend is Eclectic Institute's Hawthorn Berry capsules. I like their products because they're organic and preserved using a freeze-drying process. If you can't find them in your local health food store, you can order directly from Eclectic (www.eclecticherb.com or 800-332-4372). I recommend taking a 500 mg capsule or tablet two to three times a day.

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CHAPTER 3: ARRHYTHMIA



Virtually everyone takes for granted the predictable way in which the heart beats—until it doesn't. Perhaps you feel your heart skip a beat, or you feel strong palpitations or a racing sensation. These are all forms of the condition known as arrhythmia.

There are many types of arrhythmias, but, in general, the term refers to an irregular heart rhythm, which can also be noted as an irregular pulse. Basically, your heartbeat goes off cadence. The scenarios run the gamut from a skipped beat (a condition known as ectopic heartbeats from the Greek *ektopos*, or “misplaced”) to suddenly speeding up, which is called tachycardia (tachy = fast speed). Sometimes this benign kind of arrhythmia subsides and there are no ongoing effects, while others like ventricular tachycardia, ventricular fibrillation, and ventricular standstill can be life-threatening events.

Heartbeat irregularities are probably the most common reason for seeing a cardiologist. An arrhythmia can be quite unsettling, but I assure you, it can be effectively treated. But before you can put your erratic pump back “in the pink,” you need to know what type of arrhythmia you're dealing with.

Types of Arrhythmias

To explain the different types of arrhythmia, I need to talk a little bit about heart anatomy. This may get a bit technical, but stick with me.

The type of arrhythmia most commonly encountered by cardiologists is atrial fibrillation (AF). AF occurs when one of the two top chambers of the heart (the atria) fail to contract in response to the electrical impulse emitted from the sinus node and, instead, vibrate in response to signals from elsewhere in the heart. I'll discuss AF in more detail in Chapter 4.

Another type of arrhythmia involves premature atrial contractions (PACs). These occur when the atrium (one of the two top chambers of the heart)

contracts prematurely. PACs are usually not a problem for healthy people. Yet another type of arrhythmia involves premature ventricular contractions (PVCs), which occur when one of the two bottom chambers of the heart—the ventricles—contract prematurely.

If a patient comes to me complaining of an irregular heartbeat, I frequently will order an echocardiogram to determine the possibility of any heart muscle disease or valvular disease. When any type of arrhythmia occurs, the prognosis can be confirmed with a Holter monitor, which is a portable device that records the heart's rhythm. Holter monitoring will evaluate the type and frequency of arrhythmia. Most cardiologists do not use drugs to treat PACs or PVCs unless the patient is quite symptomatic. If an echocardiogram shows a normal heart, or Holter monitoring reveals noncomplicated PACs or PVCs, no treatment is necessary.

At the other extreme are types of arrhythmia that can be deadly: ventricular fibrillation and ventricular tachycardia. In ventricular fibrillation, the heart's pumping mechanism loses traction, and its rhythm becomes chaotic and cannot supply its very own heart muscle (that does the pumping) and the rest of the body with adequate blood. Ventricular tachycardia (aka Vtach) is an intense and prolonged racing of the heart—like a runaway PVC. These situations are particularly dangerous among patients with heart failure or who have cardiomyopathy, where the heart muscle becomes inflamed, dilated, and doesn't pump well, or where the left ventricle is dilated.

Did You Know?

- According to the American Heart Association, an estimated 4,300,000 Americans have some form of arrhythmia.
- There are about 638,000 hospital admissions per year due to arrhythmias.

Diagnosing Arrhythmias

The tricky thing about arrhythmias is that you may or may not be able to detect the irregularity. Many people are aware of skipping, strongly palpitating, or rapid heartbeats, while asymptomatic patients first discover they have an arrhythmia at their doctor's office when it shows up on an electrocardiogram (EKG or ECG).

Misdiagnosis is easy. In many cases it is very easy to confuse chronic panic disorder (CPD) with arrhythmia. CPD is characterized by recurrent and unexpected episodes of fear and/or discomfort. Some people get so tense that they release enormous amounts of adrenaline, resulting in palpitations, sweats, and chest pain.

To accurately diagnose the palpitations, one of the irregular heartbeats must be captured on an EKG (ECG). An electrocardiography test, which takes about 10 minutes, is performed in a doctor's office or hospital. Because palpitations may not occur during a standard EKG, Holter monitoring will also be performed to record the palpitations during normal activities.

Basically, if you are confused about what you are experiencing, and especially if it happens for no rhyme or reason, get thoroughly checked out by a doctor. If your ticker regularly goes "off-beat," only a doctor can put your worries to rest by examining you, taking a medical history, performing an electrocardiogram, and screening for psychiatric disorders.

What Causes Arrhythmia?

Your heart is so much more than a muscular pump. The fact is, the heart is actually ultra-sensitive and may be put out of rhythm by many

When to See the Doctor

If you occasionally feel that your heart adds or misses a single beat, don't worry because many of us experience this odd sensation, especially as we age. If your heart regularly races or misses a series of beats when you haven't been exercising or aren't emotionally upset, see a doctor right away—especially if your palpitations are accompanied by chest pain, shortness of breath, dizziness, faintness, or a feeling of weakness.

different somatic reactions. These can range from a near accident or emotional upset to overindulgence in eating, drinking, or other stimulants. It's amazing what can disturb the pattern of electrical charges that maintain normal heartbeats.

People are often unaware of how they are setting themselves up for an arrhythmia problem. I always urge my patients to address a number of things that could be the cause of their heart's distress.

The following situations can trigger or exacerbate arrhythmia, including:

- **Too much caffeine** from drinking coffee and, depending on a person's sensitivity, excess tea or colas can set off skipped or rapid heartbeats.
- **Excess sugar intake**, as it causes fluctuations in insulin and adrenaline.
- **Cocaine** and other stimulant drugs.
- **Alcohol** is another big culprit, and the combination of alcohol and the sugars in chocolate and other sweets can generate quite intense arrhythmias among sensitive people. During the holiday season, when people often consume too much of both, I see a lot of this. In fact, I call it the Holiday Heart Syndrome. I'm a huge wine lover but, if I had arrhythmia, I'd never touch a drop again.
- **Overeating**. Avoid binging at the "all you can eat buffet."
- **Cigarette smoking**. Stop if you still do.
- **Holding your breath**. Check to see if you have this tendency because taking shallow breaths while tense or performing a physical activity can upset your heart's natural rhythm.
- **Excessive stress**, be it everyday garden variety or emotional.
- **Occupational stress**. If you dislike your job and the stress is getting to you, then consider a new career.
- **Menopause**, when hormone levels drop off.
- **Deficiency of the mineral magnesium** is a very common cause. Magnesium depletion runs rampant across all age groups, with postmenopausal women being the most deficient.

- **Using birth control pills** can cause arrhythmias in healthy young women.
- **Mitral valve prolapse**, a condition in which the heart makes a clicking sound or murmur created when blood flowing through the heart momentarily gets caught in the mitral valve as it opens and closes. This condition is more common in women.
- **Cardiovascular disease**, including heart attack, hypertension, angina, etc.
- **Prescription drugs** can cause heartbeat irregularities, including those sometimes prescribed to correct arrhythmia. These may include digitalis, beta blockers, calcium channel blockers, all anti-arrhythmic drugs, tricyclic antidepressants, and cimetidine (Tagamet)—a popular ulcer drug.
- **Decongestants and asthma sprays.** Popular over-the-counter drugs for colds can cause problems. Those that contain ephedrine or pseudoephedrine are the most common offenders. They can speed up or bring on a more forceful heart rate, which may exacerbate serious arrhythmias or even cause them. If you already have a problem, avoid these medications.
- **Food coloring, MSG, and other chemical food additives.** Avoid these if possible.
- **Environmental toxins and heavy-metal toxicity**, such as exposure to mercury from dental fillings or contaminated fish.
- **Diving into physical exercise without warming up.** To allow your heart to adjust gradually to the demand of increasing activity, spend ten minutes on the warm-up and cool-down phases of your routine. A sudden burst of exercise can trigger palpitations. Pay extra attention to the cool-down phase, particularly when doing exercises that involve your legs, such as running or cycling.
- **Competitive sport activities.** Stick with noncompetitive sports. The combination of competition and physical stress is a much more potent trigger of arrhythmias.

Mondays Are Malevolent

There are more sudden deaths on Mondays due to lethal arrhythmias or heart attacks than on any other day of the week. This is due to an increased “outpouring” of the stress hormones cortisol and adrenaline (which are known triggers of heart attacks) among workers gearing up for work.

These findings were reconfirmed in a study of 683 patients—predominantly middle-aged men with implanted defibrillators and a history of life-threatening ventricular arrhythmias. Researchers concluded that Monday is the most stressful day of the week and is yet another example of how emotional stress can wreak havoc with the heart as surely as the “classic” physical factors.

It’s important to recognize the link between stress and cardiovascular disorders. So, if you’re having a stressful day, try to go with the flow. And remember to be extra cautious if that day is Monday.



Traditional Therapies

Medication. Anti-arrhythmic drugs such as digoxin and calcium channel blockers help the heart work more efficiently by enhancing and regulating the heartbeat. Unfortunately, these drugs also have the highest rate of side effects of all cardiovascular medications, and in rare cases can cause sudden death. Because they can be so dangerous, I am more uneasy with them than with any other medications, and I avoid prescribing them whenever I can. If I do prescribe them, I’ll often have the patient admitted to the hospital for the first few days to monitor their heart.

The problem is that while these drugs can control arrhythmias, they can also make them worse. Take digoxin, for example. This drug might be prescribed to treat an arrhythmia, but it can sometimes trigger one instead. Because of this, I’ve been tapering off prescribing anti-arrhythmic drugs and have begun relying more on natural healing. For more about digoxin and calcium channel blockers, see Chapter 8.

Surgery. For patients with life-threatening arrhythmias, such as ventricular fibrillation and ventricular tachycardia, cardiologists frequently

will recommend surgical implantation of a device known as an automated implantable cardioverter defibrillator (AICD).

The AICD is a “mini” defibrillator that’s implanted in the abdominal wall with sensing and discharging electrodes to the heart. When the sensing wire detects an electrical stimulation in excess of its pre-programmed limit, the AICD fires an electrical discharge to break the high heart rate and reset the heart’s conduction system. This is called “cardioverting” the heart. If the underlying rhythm disturbance is ventricular fibrillation (full cardiac arrest), this same mechanism is referred to as “defibrillation.”

I recommend an AICD for any patient at high risk for sudden cardiac death due to a life-threatening arrhythmia. However, I understand the fears surrounding such a critical decision. It’s important to express those fears to someone who will listen with compassion—ideally, your doctor. Open communication about your emotions is the first step toward actively participating in your own care and recovery.



Alternative Therapies

Your action plan for treating arrhythmia and bringing your heart back into rhythm has three basic elements: adding specific foods to your diet, reducing stress, and taking a few key nutritional supplements. Let’s look at each of these.

Foods

Fish. Cold-water fish are a rich source of omega-3 fatty acids. Studies have demonstrated that omega-3 fatty acids can protect you from sudden cardiac death due to malignant cardiac arrhythmias.

Evidence suggests that people who eat fish regularly live longer lives. But that is true as long as the fish are “good fish.” Avoid farm-raised fish or fish that may have been exposed to environmental toxins. My recommendation for the best and safest fish to eat is scrod, wild salmon, mackerel, sea trout, and sardines.

Eat foods rich in magnesium. Low body stores of magnesium appear to increase the risk of

abnormal heart rhythms. Magnesium is essential for scores of enzymatic reactions and normal muscle function, yet is often depleted in patients with cardiac arrhythmias. This mighty mineral acts physiologically like a calcium channel blocker by stabilizing cardiac conduction, heart muscle, and vascular membranes.

I recommend that anyone whose heart is misbehaving eat abundant amounts of deep-green leafy vegetables such as spinach, kale, dandelion, etc. These foods contain chlorophyll (which gives them their color), whose chemical composition centers on magnesium. You may want to include almonds, avocados, pumpkin seeds, sunflower seeds, Brazil nuts, buckwheat, amaranth, and barley. Nuts, legumes, and whole grains will help you replenish your stores of this key mineral. I also recommend taking supplemental magnesium.

Eat potassium-rich fruits. Finally, low potassium levels can be the cause of cardiac arrhythmias. Especially for those of you who regularly consume a lot of caffeine and alcohol (as well as for those of us who do not), start adding potassium-rich foods into your diet. Fruits such as figs, bananas, and raisins are high in potassium. Other good sources include orange juice, potatoes, garlic, yogurt, and whole grains.

Relax, Relax, Relax

Given that stress is a primary cause of arrhythmia, it is very important that you engage in tension-relieving practices such as yoga, prayer, and meditation to control stress. Or, consider learning Tai Chi or Qigong if a convenient class becomes available. And, of course, exercise is always of great benefit in relieving stress, but, if you are severely symptomatic, I recommend you take a stress test in your doctor’s office to make sure that it’s safe.

If stress is the main culprit causing your condition, you can also try listening to music, massage, and other techniques such as aromatherapy (using citrus oils in the bath to alleviate minor palpitations). For more on stress reduction techniques, see Chapter 13.

I also want to mention the importance of correct breathing techniques. Proper deep abdominal breathing is a great stress-buster and you can practice it the very instant you feel any tension escalating.

Breathing right is especially important if you have arrhythmia because of its impact on heart rate variability—the imperceptible variations in the heart’s beat-to-beat interval that result from the basic breathing process. Increasing your heart rate variability increases your ability to cope with internal and external changes and reduces the likelihood of a sudden cardiac event. By learning to alter your breathing pattern, you affect your heart rate variability favorably and get a calming effect.

Nutritional Supplements

Most of the supplements I recommend for arrhythmia are the same supplements I recommend for coronary artery disease and angina. For more information about these supplements, refer to Chapters 1 and 2.

Magnesium (400–800 mg), **potassium** (500–1,000 mg), and **calcium** (500–1,000 mg). Taken daily, these minerals can help regulate heart rhythm.

! Caution: Do not take potassium supplements if you have kidney problems.

CoQ10. The heart muscle consumes huge amounts of oxygen and energy. CoQ10 recharges energy in the heart and other body cells, and can reduce ectopic (misplaced) heartbeats. For arrhythmia, I recommend 100–200 mg of CoQ10 daily in hydrosoluble form.

L-carnitine. This amino acid has been shown to effectively stabilize heart rate and help increase overall energy. For arrhythmia, I recommend 1 gram and sometimes up to 3 grams daily.

Fish oil. Omega-3 fatty acids, especially docosahexaenoic acid (DHA), may improve heart rate variability, particularly in men. As I mentioned earlier, heart rate variability is important because it provides your heart with a wide range of pumping variation so that sudden shocks to

Devices for Increasing Heart Rate Variability

There are a couple of handheld devices that can help you increase your heart rate variability. One of these is the StressEraser (cost \$179; available at www.stresseraser.com), which allows you to see your HRV pattern in real time and learn how to increase the variability through breathing. Another interesting personal device that measures HRV and teaches stress relief is called emWave (cost \$199; available at www.emwave.com).

your system don’t result in a cardiac event. I recommend taking 2–4 grams daily.

Hawthorn berry. In animal research, this herb has been shown to increase blood flow to the heart, which is accomplished by decreasing the resistance in surrounding blood vessels so the heart pumps with more ease. This in turn helps to normalize irregular heart beats. It may be a good alternative for those who can’t tolerate even small doses of digoxin. For the relief of minor palpitations, try taking one 500 mg capsule or tablet two to three times a day. (See page 16 for the brand of hawthorn I recommend.)

! Caution: I don’t recommend taking hawthorn berry if you’re on digoxin because of their similar effect on the heart. If you feel you need to take hawthorn and digoxin together, do so only under a doctor’s guidance.

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CHAPTER 4: ATRIAL FIBRILLATION



Atrial fibrillation (AF) is a condition that many of my patients live with. It is the type of arrhythmia most commonly encountered by cardiologists. As I touched on briefly in Chapter 3, AF describes a phenomenon involving the two upper chambers of the heart, the atria. In healthy hearts, the atria contract synchronously when stimulated by an electrical impulse from the sinus node, the heart's "natural" pacemaker.

For patients with AF, this sequence is overpowered by discharges from electrical cells scattered throughout the atria. Instead of responding to one unified signal to contract, the atria react to the many scattered signals by "fibrillating," or vibrating rapidly. As a result, less blood is pumped from your heart. When the atria are fibrillating, blood passes from the atria to the ventricles (the lower chambers of the heart) by way of simple gravity when the valves open.

You can visualize this difference by imagining a man milking a cow. Your heart is roughly the size of a grown man's fist, and the rhythmic motion of milking a cow resembles a normal atrial contraction. There's a distinctive force that propels the blood (or milk, as in this example) forward. Now imagine a man wiggling his fingers inside a mitten. That's what AF looks like. There's a lot of movement, but it has no organization or direction.

Over time, the fibrillating atria increase in size and, because blood isn't forcefully pushed out of the atria, the risk of blood collecting on the side walls of the atrial chambers and forming clots increases significantly. (The inside of the atria have a rough texture similar to an English muffin.) These clots can spill into the arteries and generate a stroke.

Symptoms and Causes

During periods of fibrillation, you may feel a vibrating or quivering of the heart, accompanied by dizziness, lightheadedness, and even

shortness of breath. The pulse of someone in AF is irregularly irregular, meaning there is no pattern. Some people can be very symptomatic with AF, especially when they experience it for the first time before their bodies have a chance to adjust to it. Others may feel no symptoms at all. Some of my patients with AF have said, "I thought I had the flu," and others have reported feeling "strange," weak, or just "different."

The symptoms of AF are often related to either abnormally high heartbeat rates (tachycardia), unusually low heartbeat rates (bradycardia), or both high and low heartbeat rates (called bradycardia syndrome). Low heartbeat rates range from 30–50 beats per minute [bpm], and high heartbeat rates can be up to almost 200–300 bpm when it's out of control. In fact, I have to tell you how anxious I was that first couple of years I practiced in emergency medicine; many patients came to the hospital in rapid AF of over 200 beats a minute, and I thought their hearts would explode! I learned that, for a short time, most people could tolerate those high heart rates better than I expected.

No doubt about it though, AF can be dangerous. Uncontrolled AF (episodes longer than 24 hours, or extremely high or low heart rates) can place a considerable strain on your heart. This can lead to a heart attack or congestive heart failure. And as I mentioned earlier, the risk that blood clots may form in the fibrillating atria can lead to the most dreaded complication of AF: stroke.

The causes of AF are varied and include long-standing high blood pressure, coronary artery disease, elevated thyroid function, and heart surgery. Alcoholism, infections, and even toxicity

Did You Know?

- According to the American Heart Association, AF affects an estimated 2,200,000 people in the US.
- There is a strong link between AF and stroke. Individuals with AF have a fivefold increase in stroke rate over those without AF. Roughly one-third of strokes that occur over age 65 are caused by AF.

from heavy metals such as mercury can also cause AF. But the most common causes are aging of the conduction system and dilated (stretched) atria from conditions such as leaky heart valves (especially the mitral valve).



Traditional Therapies

Most people have recurrent AF, meaning that the condition comes and goes. The primary goal in treating AF is to limit the amount of time the heart is out of rhythm and make provisions for slowing down rapid heartbeats or accelerating heartbeats that are too slow. Another treatment goal is the prevention of blood clots that can cause strokes.

Stabilizing Heart Rhythm

Medication for AF includes digoxin-type drugs that are used to enhance the contraction of the ventricles in order to improve cardiac output and control the number of impulses it allows through to generate contractions. Beta blockers such as Inderal, Lopressor, and Corgard may be prescribed to control high heart rates. Other anti-arrhythmics, such as Amiodarone, may also be prescribed.

As I told you in Chapter 3, anti-arrhythmia medications such as digoxin can have serious side effects and can actually trigger an arrhythmia. So, physicians must exercise caution and use good judgment. It's common that some people have such well-functioning hearts that high heart rates are not a problem at all. For them, the goal is what doctors call "rate control." Living with AF is, for most patients, a more reasonable goal than achieving regular rhythm with drugs that may be toxic for them.

Hospital interventions include a procedure called electrical cardioversion. During cardioversion, you're put under light sedation and defibrillator paddles are applied to the chest, delivering a quick shock to "break" the atria from fibrillating and allow the heart to resynchronize and reestablish control. This low dose of electricity gives the conduction system a "jolt," which enables it to reset itself...sort of a "Thanks, I needed that!" for the heart.

Common Triggers of Atrial Fibrillation

- Emotional stress/anger
- Caffeine in coffee, tea
- Soda
- Chocolate
- Alcohol
- Excessive salt or MSG
- OTC products such as nasal sprays w/ephedrine and weight loss products with amphetamine-like properties
- Cold liquids
- Pollution—heavy metals
- Allergens
- Low oxygen environs such as high altitudes
- Growth hormone
- Gastric reflux
- Constipation

Cardioversion can be quite successful for a first episode of AF, or if recurrent AF has been going on for less than six months. Getting the atria to snap back into a good rhythm for patients with a longer history of AF is more of a challenge. It's not uncommon for the heart rhythm to remain normal for a week or less, and then flip out of sync again. So, if you've been suffering from AF for a while, cardioversion may not be the fix you're looking for.

In some cases, more invasive procedures may be necessary. You may have to have a pacemaker installed as a mechanical backup if you're prone to slow heart rates and have symptoms of light-headedness or loss of consciousness as a result. You may also need a pacemaker if you have high heart rate AF or if you swing between very high and very low heart rates that can't be controlled with medication.

Another invasive procedure called "ablation" uses radio frequencies to "silence" specific isolated areas of the conduction system that have been mapped and identified as electrically unstable. Ablation has been known to stop rapid AF in its tracks. Still, ablation therapy is not a "cure." Although it will eradicate many of the rapid heart rate episodes and perceived palpitations associated with AF, ablation therapy may not eliminate all AF symptoms.

Anticoagulation Therapy

Because your atria are twitching instead of contracting in AF, and because your heart rate

may be too fast or too slow to empty them completely, blood may collect, pool, and clot. Hence, there is a need for anticoagulation therapy. The anticoagulant most frequently prescribed is Coumadin (warfarin). Studies have shown that Coumadin can protect you from a stroke if you have AF.

People with AF struggle with this popular anti-coagulant and often ask if they can trade it in for other blood-thinning alternatives. For example, you may wonder if you can take aspirin instead of Coumadin. If you have AF, your best bet is *still* Coumadin. Aspirin is less effective for preventing clots and strokes. If you have AF and you're not on conventional blood thinners like Coumadin, your risk of stroke is at least five to six times greater than those who are on them.

Coumadin is the key to clot prevention, and I keep most of my AF patients on it because it can save their lives. That's because the majority of my AF patients have some structural heart disease, and a host of risk factors for blood clots and stroke, including elevated inflammatory markers, positive family histories, high blood pressure, past cardiac events, diabetes, leaky heart valves, previous heart failure, and a dilated (enlarged) left ventricle. There is no adequate blood-thinning substitute if you have any of these risk factors. But please be reassured that even if you have to take Coumadin, you can live a good quality life. For more about Coumadin, see Chapter 8.

Exception for Those With "Lone" AF

However, not everyone with AF needs to take Coumadin. People with occasional bouts of AF but no other risk factors for heart disease or stroke have what is termed "lone" AF and are safe without this drug. These "lone fibbers" have strong and healthy hearts. They are usually diagnosed in an emergency room after coming in for a fast and irregular heart beat (lone fibbers have quick bouts 3–4 times a year on average). Their AF episodes usually don't last more than just a few hours.

Who qualifies as a "lone fibber"? Most of the time, the lone fibber is younger than 60, usually without any health issues, and lab tests rule out obvious causes such as underlying heart disease, hyperthyroidism, and electrolyte imbalances. Most lone fibbers aren't hypertensive, and have normal size heart chambers.

The precise cause of lone AF is not known, but we don't think the cause is oxidative stress or mitochondrial damage. Holistically, it's been suggested that lone AF may be seen as a wake-up call that neurotransmitters may be out of balance.

My treatment advice if you're a lone fibber is alternative blood thinners (see below for details). Of course, lone fibbers should have good medical follow-up, and be treated more aggressively if their health status changes or if their AF becomes more frequent.



Alternative Therapies

I see quite a few patients with long-standing recurrent AF. Like many of you, they ask what they can do instead of, or in addition to, taking drugs to keep their hearts beating in normal rhythm. My action plan for these patients includes most of the same recommendations I made for arrhythmia in Chapter 3. A healthy diet of fruits, vegetables, fish, low-fat dairy products, and lean meats is rich in minerals such as potassium and calcium that are particularly effective in the treatment of AF.

The nutritional supplements I recommend for AF are for two purposes: stabilizing heart rhythm (for everyone with AF) and blood-thinning (for those with lone AF who are not taking Coumadin). I'll address each of these purposes separately.

Stabilizing Heart Rhythm

I've had great success helping AF patients stabilize erratic heart rhythms with the following supplements:

- Fish oil (1–2 grams)
- CoQ10 (100–200 mg)
- L-carnitine (1–2 grams)

Reverse Your Deadly Heart Problems NOW

- D-ribose (5–15 grams)
- Magnesium (400–800 mg)
- Potassium (500–1,000 mg)
- Calcium (500–1,000 mg)
- Hawthorn berry (500 mg two to three times daily)

And there is now strong evidence that vitamin C is extremely beneficial as well.

Vitamin C Reduces AF Recurrence

For more than five years, cardiologists in Greece studied the influence of oxidative stress and inflammation as underlying factors in AF. The researchers believed that when these problems affect the atrial muscle tissue, they upset localized electrical activity. Their idea was to combat the free radicals and inflammation with a daily dose of 1,000 mg of vitamin C.

To test their hypothesis, the researchers gave daily 1,000 mg doses of vitamin C to patients who were both undergoing cardioversion and on drug therapy. Vitamin C dramatically reduced post-treatment relapse into arrhythmia. One week after treatment, AF recurred in only 4.5 percent of patients taking vitamin C, but recurred in 36 percent of patients in the control group that received a placebo.

Here's how vitamin C helped. Individuals with AF have a significantly higher level of C-reactive protein (CRP) in their bloodstream, a major indicator of inflammation. The vitamin C intake considerably decreased CRP, on a scale similar to that seen with statin drugs. (For more on the anti-inflammatory properties of statins, see Chapter 8.)

This is a powerful finding. I've added 1,000 mg of vitamin C to my daily "must take" supplement list for AF patients. Take it in divided doses with food. I'm sure that most of you take vitamin C, but if you have AF, this is another reason to not miss a dose—ever.

Alternative Blood Thinners

As I mentioned earlier, there is no adequate blood-thinning substitute for Coumadin if you have recurrent AF with certain risk factors for stroke, a

leaky valve, or enlarged heart chambers. But those with lone AF (occasional bouts of AF with normal valve function and heart size are at lower risk for blood clots and are good candidates for alternative blood thinners.

Here's what I recommend for blood thinning if you have lone AF:

- Fish oil (2–3 grams daily)
- Garlic (1–2 grams daily in capsule form)
- Nattokinase (100 mg daily)
- Vitamin E as mixed tocopherols (200–300 IU)
- Bromelain, an enzyme derived from pineapple (600 mg)

Remember, these alternative blood thinners are just that: alternatives. They are not intended to be taken with Coumadin. You don't want to thin the blood too much. For more about taking supplements with Coumadin, see Chapter 8.

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CHAPTER 5: CONGESTIVE HEART FAILURE

In my years of practicing cardiology, I've found that the cardiovascular condition in which alternative therapies have the biggest impact is congestive heart failure (CHF). CHF is a serious condition in which a weak, energy-starved heart begins losing its ability to efficiently pump blood. In CHF, the heart keeps working, but the body's need for blood and oxygen isn't met. When the heart doesn't pump enough blood, the blood backs up in the veins, and fluid builds up in the body.

Symptoms of CHF include shortness of breath, especially when lying down; persistent cough or wheezing (caused by pulmonary congestion, which is fluid buildup in the lungs); tired, run-down feeling; swelling from fluid buildup (edema) in the feet, ankles, and legs; lack of appetite or nausea; increased heart rate; and confusion or an inability to think clearly. These symptoms can be disabling and can severely reduce a patient's quality of life. Even with considerable progress in the conventional treatment of heart failure, the condition remains one of cardiology's major challenges. Still, I find that alternative therapies make a huge difference in how CHF patients feel.

What Causes CHF?

CHF is generally a symptom of underlying problems. In other words, the heart doesn't just "fail" on its own, even though the underlying cause might not easily be determined. Some of the causes of CHF include:

- Clogged arteries that prevent blood flow to the heart

Did You Know?

- According to the American Heart Association, an estimated 5,700,000 people in the US have CHF.
- Up to 40 percent of CHF patients die from the condition within a year after diagnosis, and 70 percent die within 10 years.

- Previous heart attack that has damaged the heart muscle
- Heart defects
- High blood pressure
- Damaged or diseased heart valves
- Diseases of the heart muscle
- Infection of the heart or heart valves

Other risk factors for CHF include diabetes, alcohol abuse, nutrient deficiencies, and stress. Understanding the circumstances that might be contributing to (and possibly be the primary cause of) your heart's weakened state, as well as the stage of your disease, the nature and severity of your symptoms, your sensitivity to traditional cardiac drugs, and your tolerance for their side effects, will determine which treatment option is best for you.



Traditional Therapies

The medical community has come a long way in the treatment of CHF, and for many patients traditional medicine is effective. Traditional treatments focus on medication, and the use of prescription medication can be very helpful in alleviating symptoms, although the side effects can be almost as problematic as the symptoms. Here are the most commonly prescribed drugs for CHF:

- Digoxin (digitalis)
- Diuretics
- ACE inhibitors
- Beta blockers
- Nitroglycerin

For more information about these drugs and their side effects, see Chapter 8.

Another problem with prescription medication is that in some cases the drugs simply don't provide enough relief—you feel better, but not "up to par." That is why I prescribe alternative therapies for all of my patients with CHF. These alternative therapies can augment traditional

medicines and provide the final measure of relief that was lacking with drug therapy alone.



Alternative Therapies

My action plan for treating CHF focuses primarily on nutritional supplements designed to re-energize failing hearts. These supplements work for the majority of my CHF patients. Another alternative therapy I'll prescribe for patients who need additional relief is magnetic molecular energizer therapy.

Nutritional Supplements

The following supplements are those that I use in my practice, either as an adjunct to conventional medicine or in place of it. You often need to take them for four to six weeks to determine whether these nutrients are doing any good. It is a good idea to tell your physician what you are up to. It's safe to use supplements with medication but not as an immediate substitute for a medication. Eventually, you'll probably be able to cut back on your prescription drugs.

At the core of my CHF treatment strategy are the "Awesome Foursome" nutrients I told you about at the beginning of this report: CoQ10, magnesium, L-carnitine, and D-ribose. As I explained, these nutrients work synergistically to maximize energy production in the heart. For most CHF patients this additional energy production significantly improves quality of life. Let's take a closer look at the impact of these nutrients on CHF.

CoQ10

My own experience with patients and the enormous body of science supporting CoQ10 have convinced me that CoQ10 is the single greatest addition to the treatment of CHF I have seen in my over 30 years of practicing cardiology. Its primary role—the production of energy at the cellular level—fuels the heart's essential function: pumping blood. Normally, the amount of CoQ10 within the heart muscle is 10 times greater than in any other organ. But in CHF the heart cells are CoQ10 deficient, and the heart literally is not strong enough to pump blood from its own chambers.

Research confirms the value of CoQ10 in treating CHF. Clinical studies show that 87% of CHF patients improved after taking CoQ10 for six months, and for some, the gentle, natural boost to their energy-starved hearts brought dramatic improvement.

More recently, New Zealand researchers tested the hypothesis that CoQ10 blood levels are a predictor of total mortality in CHF. They took blood samples from 236 hospitalized CHF patients and then followed them for an average of 2.7 years. The researchers concluded that CoQ10 concentration in the blood is an independent predictor of mortality and that a deficiency is indeed associated with worse outcomes in CHF.

These research findings absolutely resonate with my clinical observations, which indicate that the bigger the deficiency, the more severe the symptoms. In fact, I find that my CHF patients are less symptomatic and have improved quality of life when they have CoQ10 blood levels greater than 2.5 mcg/mL (0.6–0.8 mcg/mL is considered normal).

I recommend that CHF patients take at least 200 mg of hydrosoluble CoQ10 daily, in divided doses to keep the blood level constant. The hydrosoluble form of CoQ10 is the most bioavailable. The real test of bioavailability is in CHF patients. If their CoQ10 levels are in the therapeutic range, they feel different. They can walk further without shortness of breath and have less fluid buildup in their lungs and extremities. Conversely, I found that CHF patients who took CoQ10 that wasn't hydrosoluble didn't feel any better even at higher doses.

L-Carnitine

Research shows that L-carnitine also improves symptoms and the survival rate of CHF patients. In one controlled study of 160 patients, 80 received 4 grams of L-carnitine daily for 12 months, while the other half received placebos. Both groups continued to take conventional drugs during the study. Among those taking the L-carnitine, CHF symptoms lessened or abated, and there was a

reduction in mortality: 1.2 percent compared to 12.5 percent for the controls.

Take 1 gram of L-carnitine fumarate on an empty stomach two to three times daily (2–3 grams total), depending on the severity of your CHF.

Magnesium

Magnesium deficiency is an overlooked cause of CHF. This mineral is crucial to the production of energy in the cells. As in the case of CoQ10, research has found that magnesium levels are a predictor of mortality in CHF patients.

In one study, a group of Israeli researchers examined the magnesium levels in 404 patients hospitalized for CHF to see if the levels of this mineral had anything to do with survival rates. They found that 50% of those CHF sufferers admitted to hospital had low levels, and, after statistically adjusting all-cause mortality of other factors such as renal failure, age, and severity of CHF, they concluded that magnesium deficiency is a reliable predictor of survival with this condition.

Take 400–800 mg daily to replenish your magnesium levels.

D-Ribose

For the last couple of years I've been prescribing D-ribose for my patients with failing hearts. Because the discovery of D-ribose is relatively new when compared with CoQ10 and L-carnitine, I've considered it the missing link in treating CHF. This supplement appears to restore depleted energy pools in energy-starved hearts. D-ribose supports the production of ATP levels in cardiac muscle, which aids the heart's muscle contraction. The more this muscle contracts, the more blood it allows to flow in.

There is definitive research in support of my clinical findings. Researchers at the University of Utah found measurable symptom improvement from the results of a randomized, double-blind, placebo-controlled study on the effect of D-ribose supplementation and exercise in 15 CHF patients for 8 weeks. In addition to finding enhanced myocardial energy levels, the researchers found

Beefing Up Your Nutrient Cocktail

For those few patients who do not get relief from symptoms with a combination of conventional treatments and CoQ10 and L-carnitine, I add the amino acids **L-arginine** and **taurine**. The latest scientific literature shows that adding L-arginine and taurine to your complementary treatment protocol can make a difference in your quality of life. Combining these amino acids creates a synergistic mix that improves the absorption of L-carnitine.

L-arginine, in and of itself, improves blood flow to the heart by stimulating endothelial cell releasing factor (ECRF), thereby inhibiting a chain of complex reactions that might otherwise cause plaque to form in the arteries and stifle blood flow to the heart. I recommend 2–4 grams daily, taken before bedtime.

Taurine has been shown to stabilize the electrical activity within the heart and improve the heart's contractile strength. Try adding each one individually. You can find both amino acids in health food stores. I recommend taking 3 grams daily.

improvement in ventilatory efficiency (a powerful predictor of survival in CHF patients).

Depending on the severity of your CHF, take a total of 10–15 grams of D-ribose powder in divided doses two to three times daily mixed with a beverage. (See page 10 for the D-ribose product I recommend.)

Hawthorn Berry

Hawthorn berry is a CHF treatment I've used extensively, particularly in patients sensitive to digoxin. This herb can be used as a substitute for digoxin—you get the same benefits without the side effects that digoxin can cause.

Hawthorn is among the more well-researched herbals in Europe. In one study, a group of 40 men and women who suffered mild to moderate CHF were assigned to take either a special hawthorn extract or a placebo. Those taking hawthorn realized an increase in their exercise tolerance, which is significant when you consider that most patients with CHF have problems managing any of the activities of daily living that require physical exertion. In addition, hawthorn was well tolerated (i.e., no side effects were reported).

Reverse Your Deadly Heart Problems NOW

How does hawthorn work? It is believed to improve the heart's ability to metabolize energy and utilize oxygen, and the berry's extracts contain flavonoids that increase the heart muscle's force of contraction. Take 1,000–1,500 mg daily, depending on the severity of your CHF. (See page 16 for the brand of hawthorn I recommend.)

⚠ Caution: I don't recommend taking hawthorn and digoxin together because they have similar effects. If you feel you need to, do so only under a doctor's care and close monitoring.

Magnetic Molecular Energizer (MME) Therapy

Some CHF patients are simply too far gone to respond to the nutritional solutions I recommend. However, there is hope for these patients. One of my colleagues, Dr. James C. Roberts, has been treating CHF patients with magnetic molecular energizer (MME) therapy. MME therapy was developed by Dr. Dean Bonlie of Calgary, Canada, who found that the negative field of a magnet can safely promote healing. He created a large magnetic treatment device that would increase these negative magnetic fields. MME therapy has been used successfully for a number of conditions, including cardiovascular disease.

How does MME work? As you may recall from your high school science class, all cells in the body are made up of molecules, which are made up of atoms, which consist of a nucleus of protons and neutrons with electrons orbiting around the nucleus. MME increases the orbital spin of the electrons, leading to molecular and then biochemical reactions within the cells. When applied to the heart, the MME device speeds up biochemical reactions such as ATP energy production and utilization. Stem cells in the heart are stimulated to proliferate and differentiate into replacement cells. This results in better blood flow, healthier blood vessels, and improved heart function.

What can you expect from MME? The device is placed over your chest as you lie down on a bed or table. During periods of treatment, you can sleep, read, talk, or watch TV. While you may experience a warmth or tingling sensation, most

patients feel nothing. The healing power of MME takes time—Dr. Roberts has found that patients with advanced heart failure require 150–250 hours of treatment. MME is not a quick fix. But the advantage of MME is obvious—it is a noninvasive procedure with minimal risks.

MME therapy is provided exclusively at Advanced Magnetic Research Institute (AMRI) centers. Currently, there are only six AMRI centers in the US and Canada in the following locations:

- Calgary, Canada
- Mocksville, North Carolina
- Renton, Washington
- Toledo, Ohio
- Tucson, Arizona
- Virginia Beach, Virginia

Dr. Roberts operates the AMRI center in Toledo. For more information on MME, you can visit AMRI's Web site, www.amri-intl.com, or call 800-265-1119.

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CHAPTER 6: HEART ATTACK

All too often, a heart attack—abbreviated AMI for myocardial infarction (myo=muscle, cardio=heart, infarction=area of cell death)—strikes out of the blue. Most people never think it's going to happen to them, and the next thing they know, they're a patient in a critical care unit. When I talk with them later, I find out that most survivors had an inkling something was brewing, but they dismissed the symptoms. In fact, denial is a major risk factor.

If, God forbid, you or someone you know has the misfortune of suffering a heart attack, my goal in this chapter is to give you the information you need to manage the situation. The alternative therapies I recommend will not only maximize the heart's healing—they'll also bring you to a new level of health so that you don't have to face this misfortune again.

The technical definition of a heart attack is death or damage to part of the heart muscle that occurs when the blood supply is severely reduced or stopped, usually due to a blockage in the coronary arteries. The heart muscle suffers permanent damage if the blood supply is cut off for more than a few minutes. Clearly, time is of the essence when you're dealing with a heart attack.

What Are the Symptoms?

When it comes to heart attack symptoms, it's important to remember that they can vary from person to person. Sometimes it can be difficult to recognize when you're having a heart attack. Although some people have sudden and intense symptoms, most heart attacks start slowly with mild discomfort. You may not know what's wrong and wait too long before seeking medical help.

It's also important to note that heart attack symptoms in women are not the same as in men. Although both men and women experience chest pressure or discomfort, women generally experience a wider variety of vague, ill-defined symptoms than men do. A woman is

less likely to survive a heart attack—and one of the reasons why is that women have a different set of symptoms that are frequently mistaken for non-heart-related illnesses and not considered imminently dangerous.

In the box below are the most common symptoms in men and women. These classic symptoms are not 100 percent gender specific. If you experience more than one of these symptoms concurrently, or any one symptom is unusually intense, a visit to the doctor or emergency care facility is warranted.

Being Prepared

No one likes the thought of planning for a heart attack, but, as I said earlier, time is of the essence should you have one. The best chance for survival and optimum recovery occurs if you are treated within two hours of the onset of symptoms. Cardiologists describe this window of time as "golden." Even after a massive heart attack, emergency treatment is so advanced today that your odds of recovery dramatically improve if you can make it to the hospital quickly. Just a decade or two ago, the picture wasn't nearly as rosy.

Heart patients with diagnosed coronary artery blockages must be ultra vigilant and prepared for

Heart Attack Symptoms

<i>Men</i>	<i>Women</i>
Mild to intense mid-chest pressure	Dull, aching chest discomfort (vague)
Shortness of breath	Acute breathlessness
Dull pain between the shoulder blades	Sudden, profound fatigue
Achiness in the jaw	Jaw or neck pain
Pain in left arm or elbow	Pain in left arm or elbow
Profuse sweating	Abdominal discomfort, nausea, vomiting
Indigestion (often overlooked)	Dizziness, even blackouts
Nausea	Vague flu-like symptoms

Reverse Your Deadly Heart Problems NOW

the worst-case scenario. “Ultra vigilant” means having an emergency game plan.

If you have severe chest pain, fluctuations of consciousness, slurred speech, or profound sudden weakness of one side of the body, call 911. When you call 911, immediately tell the operator where you are, along with your phone number in case you’re disconnected.

An emergency is a race against time. Ask the 911 operator how long it will take emergency responders to reach your location. If it’s expected to take longer than 20 or 30 minutes, have another contingency plan in place, such as a spouse, relative, or friend who can rush you to the hospital. NEVER try to drive yourself. You’re at high risk of losing consciousness from an arrhythmia. Like an expectant mother, make some “dry runs” to the emergency room with your “support team” members so they know the fastest route.

Keep aspirin in your medicine cabinet (and in your purse or wallet), and chew one as soon as heart attack symptoms begin (don’t swallow it whole). Do not substitute ibuprofen, acetaminophen, or another pain reliever. Only aspirin has the anticoagulant clout that may help disintegrate a possible clot. Also take nitroglycerin as directed if it has been prescribed for you.

What to Expect After a Heart Attack

Once you’re at the hospital, things will move very quickly. Up to 50 percent of the time, sudden death is the first symptom of heart disease, so any patient who has survived the first two hours post-MI has passed a significant milestone. However, even with the best of medical care, as many as 10–12 percent of people who survive the initial attack never leave the hospital (they die in the days following).

The first 48–72 hours after a heart attack are critical, and a prognosis can change at the drop of a hat. For simplicity, the doctor may communicate with one key family member. It’s helpful for the family to establish some kind of telephone tree to pass along news.

Did You Know?

- According to the American Heart Association, an estimated 7,900,000 people in the US have had a heart attack.
- About 1,200,000 heart attacks occur each year, and roughly 38 percent of those who have a heart attack in any given year die from it.

When it’s time for a patient to be discharged from the hospital, close caregivers should be present for any medical instructions because patients frequently don’t remember details. At home, one of the biggest challenges that patients and loved ones face is a sense of day-to-day suspense. Many patients say they feel like they are just waiting for the other shoe to drop. These feelings are normal.

Feeling the Feelings

A range of strong emotions can overwhelm the patient during the first hours, days, and weeks after a heart attack: shock, denial, apprehension, fear, panic, anger, betrayal, sadness, depression, and grief. The patient may be clinging to and dependent on loved ones for every little thing, or the opposite: withdrawn and preoccupied or even obsessed with his or her health. And for many who’ve been resuscitated, the brush with death has been absolutely terrifying.

Occasional, transient feelings of sadness can also be part of adjusting to recovery and the seemingly overwhelming lifestyle changes that may be needed. But, I want to caution you here that preoccupation with illness or unrelenting sadness are signs of depression—a condition that is far too underdiagnosed in people recovering from heart attacks. Without intervention, the risk of a second cardiac event is up to four times greater in the company of a depressive reaction, so consult a physician for a professional evaluation if needed. Most often, short-term antidepressants and/or a few psychotherapy sessions are enough to lift your mood, help you cope, and boost your chance of long-term survival.

Healing Takes Time

One of the hardest things for many of my patients to appreciate after a heart attack is that there's a scar area that's healing in their heart. So often they don't understand why simple activities that never used to tire them are exhausting the first three months of recovery (the average length of time it takes for your heart to knit a strong scar). The reason for that fatigue, which is the number one symptom after a heart attack, is that the heart is using a lot of energy for healing, and it can only tolerate a little effort at a time.

The heart needs a full three months to truly heal, filling in and strengthening scar tissue in the area where cells died. The more you can slow down a bit and gradually work your way back to normal activity, the better your heart will likely work in the future. The biggest threat is doing too much too soon.

Life Can Actually Improve

If you have been confused about what's happening and what you can do after a heart attack, I hope the recommendations I outline below help you "take heart." The good news is that most patients find they finally start really living after a heart attack. They usually feel better than they did before their heart attack, because they're eating mindfully, exercising, and taking

A Cardiac Rehabilitation Program Can Help

To help get your life back to normal, I urge you to enroll in a rehabilitation program. My wife Jan is an experienced cardiac rehabilitation nurse who's worked with hundreds of patients who must learn to live with angina and arrhythmias. She says the biggest misconception about these programs is that they're "all about exercise."

In reality, much of rehab focuses on patient education and information ranging from heart-health basics—such as stress reduction and diet—to breathing and sex. These programs are also critical for identifying self-destructive lifestyle habits. "For some people," Jan says, "life does begin after a cardiac event." She has helped people take stock of their lives, decide how they want to spend the time they've been given, reset priorities, and sometimes even decide if they need to change professions.

key nutritional supplements—usually for the first time in their lives.

In addition, they have taken time out for personal relationships. Many patients tell me that in the months following their heart attack, they felt—sometimes for the first time—just how much other people cared about them. So the upside to this horrific journey is that when people stop taking their heart and their life for granted and start protecting them like the precious gifts they are, they usually feel and act like new people. And the truth is, they are.



Traditional Therapies

When you're discharged from the hospital after having a heart attack, you'll probably leave with a fist full of prescriptions. I can't tell you how many patients and subscribers concerned about the side effects of these medications have asked me whether there are any natural alternatives they can take. I always consider a nutritional approach, and trim down the number of medications that my patients need to take as often as possible. Some of the more common post-heart attack medications include:

- ACE inhibitors
- Beta blockers
- Statins
- Aspirin

For more about these medications, see Chapter 8.



Alternative Therapies

As I said earlier, you may not be able to avoid taking medication once you've had a heart attack. Still, the alternative therapies I recommend here can maximize your heart's healing and ultimately bring you to an enhanced level of health to help you avoid a second heart attack. My action plan for heart attack patients focuses on what I call the four pillars of healing: diet, exercise, stress reduction, and, of course, nutritional supplements.

Diet

As in the case of most any cardiovascular condition, I recommend following the Pan-Asian

Simple Blood Tests to Consider After a Heart Attack

Information about inflammatory mediators (the Toxic Blood risk factor I discussed in Chapter 1) provides additional perspective on a patient's prognosis following a heart attack, so getting tested for them is really important. For example, if a patient has high homocysteine levels, it tells me that this person is at risk for a subsequent heart attack, so I step up measures to help get the homocysteine lowered. Unfortunately, some cardiologists still aren't doing these tests, because they either don't know about them or they're not convinced of their utility. I'd strongly urge you to demand to have these tests. They involve simply drawing blood, and they're relatively inexpensive.

The most important inflammatory mediators to test for include:

- Homocysteine
- C-reactive protein
- Lp(a)
- Serum ferritin
- Fibrinogen

For an explanation of what these mediators are, the optimal levels in your blood, and my solutions for achieving these optimal levels, see Chapter 10.

Modified Mediterranean (or PAMM) diet if you've had a heart attack. This heart-strengthening diet features an abundance of fresh fruits and vegetables; whole grains, fish (wild, not farm-raised); modest portions of lean meat; and plenty of nuts, seeds, and beans. On the PAMM diet, you'll avoid sugary or high glycemic-index foods (e.g., white rice, white bread, cake, cookies, candy, chips, etc.) that ramp up the level of inflammation in your body that contributes to coronary artery disease and could lead to another heart attack. For more on the PAMM diet, see Chapter 11.

Exercise

Exercise strengthens the heart and improves blood flow. But you have to be careful if you've had a heart attack. The link between heavy exertion when you've been sedentary and a heart attack is well established. You're particularly vulnerable if you've already had a heart attack. So, you need to start slowly. Simple walking is the best plan. I can't provide safe guidelines without knowing your specific situation, but your doctor can write an exercise prescription based on a stress test before you leave the hospital and update it after a follow-up test a month or so later. For more on exercise, see Chapter 12.

Stress Reduction

The months after a heart attack can be particularly stressful for you and your family. Usually, everyone is silently worried that you will have another heart attack. This is why I encourage you

and your family to find some kind of mind-body therapy to release stress.

You are particularly vulnerable to having another heart attack after resuming regular daily activities that can be stressful such as work. As I mentioned in Chapter 3, there are more heart attacks on Mondays than on any other day of the week because there is an outpouring of the stress hormones cortisol and adrenaline (which are known triggers of heart attacks) among those gearing up for work.

Any stressful event can cause this outpouring of the stress hormones and lead to a heart attack. For example, the sudden onset of an emotional assault such as the loss of a loved one can be so intense that it can trigger a heart attack. That is why it's so important that you find ways to cope with stress. Relaxation techniques such as yoga, prayer, meditation, and mental imaging are particularly effective. The research on relaxation shows that it can temper over-secretion of the stress hormones.

For more on the importance of stress reduction and other stress reduction techniques, see Chapter 13.

Nutritional Supplements

Supplementation is a critical part of your action plan for recovering from a heart attack and avoiding another one. Post-heart attack, you should take a solid multivitamin/mineral formula so all the basics are covered. In addition,

I recommend the following five supplements. These supplements are *absolutely essential* for improved survival after a heart attack, as well as for preventing a second heart attack. For more about these supplements, see Chapter 1.

CoQ10. Studies show that when CoQ10 is administered within the first day or two following a heart attack, survival rates increase by a remarkable 10 percent. In a controlled study of heart attack treatment with CoQ10, the supplement not only reduced arrhythmia and angina, it also demonstrated an astonishing ability to reduce subsequent heart attacks and sudden death. If you've had a heart attack, I recommend taking 300 mg of hydrosoluble CoQ10 per day.

L-carnitine. As with CoQ10, if L-carnitine is administered within the first day or two after a heart attack, survival is extended and the area of tissue damage is significantly reduced. I recommend 2–3 grams per day following a heart attack.

Magnesium. There is a great deal of evidence that magnesium, when administered according to specific protocols in appropriate dosages, can reduce mortality in patients who have suffered a heart attack. In one study, when magnesium was added to the diets of heart attack patients, their survival improved by more than 800 percent. Magnesium calms the heart, reduces arrhythmia and spasm of blood vessels, and lowers blood pressure. I recommend 400–800 mg of magnesium daily.

D-ribose. As I mentioned in Chapter 1, there's a profound depression of the energy compound ATP during a heart attack when the heart is deprived of oxygen. The heart loses up to half of its ATP production ability. Although the heart eventually recovers, D-ribose can dramatically reduce the amount of time it takes to restore the heart's ATP production and to normalize cardiac function. I recommend that heart attack patients take 10–15 grams in divided doses two to three times daily.

Fish oil. There is absolutely no downside to fish oil for heart attack patients, and it can truly be lifesaving. As I told you in Chapter 1, the

landmark GISSI trial in Italy showed a 45 percent reduction in death from subsequent heart attacks for patients who took 1 gram of fish oil daily following an initial heart attack.

Because of the GISSI trial findings, almost every heart-attack patient in Europe goes home with a prescription for fish oil. The European Society of Cardiology's guidelines for preventing a second heart attack include 1,000 mg of omega-3s from fish oil per day. But despite the fact that the American Heart Association also recommends patients with cardiovascular disease consume 1,000 mg of omega-3 fatty acids per day, American cardiologists are disconnected from the fish oil remedy.

Why? For one thing, the FDA hasn't approved this dietary supplement as a treatment for a specific disease. There's also a bias—or maybe even a brainwash—factor. For some doctors, writing a prescription for something natural like fish oil is utterly alien. They never learned to prescribe nutrients in medical school—they were taught to prescribe drugs.

For patients who've had a heart attack, I recommend taking 3–4 grams of fish oil daily.

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CHAPTER 7: STROKE



The thought of you or a loved one suffering a stroke is very scary. I have firsthand experience with this. I was 13 years old when my paternal grandmother died from a massive stroke. In addition to causing death, stroke is major cause of serious long-term disability and suffering for patients and their families. My goal in this chapter is to give you the information you need on the symptoms and causes of stroke, as well as the approaches to both treating and preventing stroke, so that you and your family can be spared this tragedy.

Strokes go by many names, and there are a couple different kinds, but very simply they are a cessation of blood flow somewhere in the brain. The loss of blood supply can last from a few seconds to the rest of your life, and can affect any area of the brain, large or small. In the old days, strokes used to be called “apoplexy,” but now they all come under the heady title of “cerebrovascular accident” (or CVA).

In the least serious variety of stroke, often called a “mini-stroke,” or TIA (for transient ischemic attack), symptoms may last from a few seconds to a few hours. Symptoms can be the same as for a larger stroke, but usually less severe. Because you cannot tell right away how long the symptoms will last, you should take any sudden onset seriously and seek treatment right away. A TIA is similar to angina—it’s a sign of temporary ischemia, but no tissue damage occurs. Still, it’s a serious warning to take action.

The more serious variety, what we commonly think of as “stroke,” is much more debilitating. Of the people who suffer a full-blown stroke, roughly a third of them recover completely, a third die within the first 30 days, and the remaining third have long-term loss of function. This last group is the people we think of in nursing homes, with some portion of their selves gone forever.

Causes of Stroke

Eighty-seven percent of strokes are ischemic in nature, meaning a clot or a piece of dislodged plaque causes blockage in an artery to the brain (like a carotid artery) or in a smaller blood vessel within the brain. A thrombotic stroke is caused by a clot (thrombus) that develops at the site of the blockage, and an embolic stroke is caused by a clot or plaque fragment that originates in some other part of the circulatory system (like the heart) and travels to the brain. The blockage cuts off circulation, leading to oxygen deprivation in the tissues of the affected area of the brain. The resultant loss of blood-borne oxygen and nutrients to the area causes either a major or minor loss of neurologic function, or death.

The remainder of strokes are hemorrhagic, which means that a weakened blood vessel has burst somewhere inside the brain. The result is the same—no more blood supply—but the affected area is typically much larger, so the effect on the patient is often much more severe. Over half of all people who experience a hemorrhagic stroke die within the first 30 days, and those who *do* survive often lose more function.

What Are the Symptoms?

I’ve treated many stroke patients throughout my medical career. While the symptoms of a nonfatal, major stroke are easy to recognize—weakness or sudden loss of control over one or more parts of the body, imbalance, dizziness, impaired vision, slurred speech or difficulty speaking—a precise

Did You Know?

- According to the American Heart Association, an estimated 6,500,000 people in the US have had a stroke; each year about 795,000 people have a new or recurrent stroke.
- When considered separately from other cardiovascular diseases, stroke is the third leading cause of death in the US.

diagnosis of a TIA can be challenging. The symptoms are more subtle. People may stumble, grope for words, or have one hand feel a little numb. Unfortunately, they often shake off the signs, and 15 minutes later they are fine. Then the next day, or sometime during the following weeks, they may have a massive, more serious stroke.

Recognizing a stroke also can be more difficult in women. As in the case of heart attack, the symptoms of stroke in men and women differ. Research has confirmed this. The Temple Foundation Stroke Project was a prospective study of acute stroke management that identified 1,189 strokes over a two-year period. Structured patient interviews were conducted identifying the symptoms that prompted both males and females to seek medical attention. The study clearly showed different symptoms attributable to each sex.

Traditional stroke symptoms, such as imbalance, slurred speech, one-sided weakness in the face or the body, were more frequently reported by men. Just as in the situation with an acute heart attack, women with validated strokes were more likely to experience nontraditional symptoms than men.

Recognizing a Stroke

Traditional Signs and Symptoms

- Weakness in arm or leg or both on the same side
- Weakness in facial muscles with progression to one-sided facial droop
- Sudden headache
- Leg weakness or instability, or a gait stagger
- Imbalance in coordination: stumbling, difficulty walking or picking up objects
- Difficulty speaking and slurred speech
- Vision abnormalities: Double vision or loss of vision in visual field on same side for both eyes
- Dizziness; vertigo
- Change in consciousness level

Nontraditional Signs and Symptoms

- Facial pain or one-sided limb pain
- Nonspecific: chest pain, shortness of breath, palpitations
- Nonspecific neurological symptoms: hiccups, nausea, nonfocal/generalized weakness

Since the symptoms can be different and not the “textbook” presentation that we can quickly diagnose in men, I encourage women to tune in to their “gut reactions”—their intuition—when they feel that something is wrong and act on it.

If you experience any traditional or nontraditional symptoms of stroke, call your physician immediately and get to an emergency care facility. In case of more severe symptoms such as fluctuations of consciousness, slurred speech, or profound sudden weakness of one side of the body, don’t wait—call 911. Remember, your greatest asset is your intuition—so use it wisely.

Quick, Easy Stroke Recognition

I’ve been asked about an e-mail that has been floating around the Internet regarding how to recognize a stroke. I checked out the information. It was simple, but right on target. Hopefully you never need to apply it, but in case you do, the simplicity of it can perhaps make a difference in saving someone’s life or minimizing their symptoms.

Note the key words in each of these first three steps. Smile. Talk. Raise. The words start with the first three letters of the word stroke: s, t, r.

- **Step No. 1:** Ask the individual to **smile**.
- **Step No. 2:** Ask the person to **talk**—to speak a simple sentence, like “it’s rainy (or cloudy or sunny) outside.” Look for coherence in how the person speaks.
- **Step No. 3:** Ask the person to **raise** both arms.
- **Step No. 4:** Ask the person to stick out his or her tongue. A “crooked” tongue that curves outward to one side or the other is another easy-to-recognize indication of a stroke.

If the person has trouble with ANY ONE of these tasks, then seek immediate medical attention.

Treatment for Stroke



Traditional Medical Interventions

Medical treatment for stroke depends on the type of stroke being treated. An ischemic stroke is treated by removing the blockage and restoring blood flow to the brain. This is generally done

through a clot-busting drug such as tPa or streptokinase. This drug is most effective when administered within a three-hour window from the onset of symptoms.

Treatment of a hemorrhagic stroke is more challenging, and involves surgical interventions to stop the bleeding.



Alternative Interventions

Nattokinase/Lumbrokinase. These powerhouse clot-busters that I told you about in Chapter 1 have been used to treat ischemic strokes. Dr. Ralph E. Holsworth Jr., a Colorado physician who introduced nattokinase in the US has found that if nattokinase is administered soon after a stroke, it can help restore some of the lost function. Dr. James Roberts, my co-author of *Reverse Heart Disease Now*, finds that lumbrokinase generates the same effect as nattokinase. One patient came to his office with symptoms of having a mini-stroke (TIA)—slurred speech, face numbness, and awkward hand movements. When she refused to be hospitalized, Dr. Roberts immediately gave her a couple of lumbrokinase capsules. Within minutes, her speech returned to normal and she was able to leave the office without assistance.

Hyperbaric Oxygen Therapy. If you have an ischemic stroke, consider hyperbaric oxygen therapy. Patients undergoing this post-emergency care treatment rest in a pressurized chamber containing 100 percent oxygen. The pressure forces extra oxygen into your cells, which helps revitalize damaged cells in the brain and improve neurological function. (This is similar to the treatment divers receive after experiencing the “bends.”) The sooner hyperbaric therapy is started, the better. I’ve told my wife that if I have a stroke while at home in Connecticut, I want to be taken to the Whole Body Medicine Clinic in nearby Trumbull to receive hyperbaric treatment. To locate a hyperbaric facility near you, visit www.hbomedtoday.com.

Stroke Risk Factors

- Family history
- Race: African Americans have higher rates of hypertension, diabetes, obesity, and tobacco use—all risk factors for stroke
- Advancing age
- High blood pressure: over 140/90 mm Hg
- Diabetes mellitus
- Obesity and physical inactivity
- Arterial disease (the presence of plaque, determined by objective testing)
- Atrial fibrillation
- Valvular heart disease
- Tobacco use
- History of transient ischemic attacks (TIAs)
- Use of illegal drugs, such as cocaine and methamphetamine, which can cause blood vessel spasm and stroke even on the first use
- High inflammation marker scores: CRP, homocysteine, fibrinogen, and Lp(a)
- HDL less than 40

Preventing Stroke



Traditional Approach

Medication. If it’s determined that you’re at risk for an ischemic stroke, there are two types of medication used: (1) anticoagulants such as Coumadin and (2) aspirin. Both types work by thinning the blood and preventing blood clots. For more about how these drugs work to protect against stroke, see Chapter 8.

⚠ Caution: While anticoagulants such as Coumadin can help prevent ischemic strokes, these drugs can actually increase risk of hemorrhagic stroke. Several studies have shown that aspirin can also increase the risk of a hemorrhagic stroke. In the final analysis, however, the indication is that prevention of ischemic stroke may outweigh the risk for a hemorrhagic stroke—at least for most people.

Surgery. If it’s determined that there’s a blockage in a blood vessel leading to the brain (like a carotid artery), surgery such as a carotid endarterectomy is used to reduce stroke risk.

In a carotid endarterectomy, plaque buildup is removed from the carotid artery.

Whether or not to have this surgery will depend on the extent of blockage and the presence or lack of symptoms. An ultrasound screening is generally used to determine the extent of blockage. The bottom line is this: If a carotid artery is obstructed 80 percent or more and you have vision-related symptoms (such as feeling like you are looking through a dark veil or seeing dark spots float across your visual field), you should have surgery. But, if the artery is obstructed less than 80 percent and you have no vision-related symptoms, then you can hold off on surgery.



Alternative Approach

Your best bet of preventing ischemic stroke is with foods and supplements that thin the blood and support optimum blood flow, as well as reduce the blood vessel inflammation that contributes to plaque formation and instability. Here are my specific recommendations:

PAMM diet. This anti-inflammatory diet emphasizes eating foods with blood-thinning properties, including cold-water fish such as wild salmon, garlic, onions, fermented soy products such as natto, walnuts, and spices such as ginger and turmeric. For more about the PAMM diet, see Chapter 11.

Pomegranate juice. Research suggests that the polyphenols in pomegranate juice might be instrumental in reducing plaque in arteries. In one study, researchers found that patients with carotid artery obstruction who drank approximately 1½ ounces of pomegranate concentrate every day for one to three years had a reduction in intramedial thickness (IMT) of the carotid artery walls, indicating a reduction in plaque. Drink 2 ounces of pomegranate juice diluted in 4–6 ounces of water daily.

Potassium-rich foods. Potassium relaxes arterial walls and promotes blood flow. Harvard University researchers have found that a diet high in potassium helps protect against stroke-related death, particularly for individuals with

hypertension. In an eight-year study of 43,738 men ages 40 to 75, a “strong and significant” reduction of stroke risk was found among those with diagnosed hypertension who consumed, on average, 4.3 grams of potassium daily compared to those with the lowest intake (an average of 2.4 grams). Many foods are rich in potassium, including raisins, prunes, apricots, papaya, dates, avocados, bananas, strawberries, watermelon, cantaloupe, oranges, beets, greens, spinach, peas, squash, tomatoes, mushrooms, baked potato, beans, peas, turkey, fish, and chicken.

Supplements. Make sure your daily supplement regimen includes these nutrients to thin the blood and prevent blood clots:

- Fish oil (2–3 grams)
- Nattokinase (100 mg)
- Garlic (1–2 grams in capsule form)
- Vitamin E as mixed tocopherols (200–300 IU)
- Bromelain (an enzyme derived from pineapple—600 mg)

⚠ Caution: If you take Coumadin for a blood thinning effect, do not take nattokinase or garlic as they may accelerate the effect. Also, don’t take more than 3 grams of fish oil daily if you are on Coumadin; up to 3 grams is OK. For more on supplements and Coumadin, see Chapter 8.

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**PART II: CONVENTIONAL
TREATMENTS AND MEDICAL
TESTING**



CHAPTER 8: CARDIOVASCULAR MEDICATION



No cardiologist, myself included, can practice without certain pharmaceutical drugs. Many of these drugs are extremely useful, and I don't hesitate to recommend them when they are necessary. Emergency situations and certain types of cardiovascular conditions may warrant the use of medication.

With that said, however, I want you to be aware that many cardiac drugs have serious long-term side effects. As a result, I try to avoid prescribing them whenever possible and have successfully helped most of my patients reduce their reliance on potentially harmful medication. The result is an astounding increase in quality of life.

In this Chapter, I'll identify the pharmaceutical mainstays, what they're used for, typical side effects, and alternatives that I'll use if they're available.

Note: Although many medications have natural alternatives that may reduce your need for medication, it's imperative that you work with your doctor before changing the dosage of any of your prescription drugs. Never stop taking any of them without your doctor's explicit consent.

ACE Inhibitors

ACE inhibitors (Capoten, Altace, Vasotec, Lotensin, Monopril) slow the activity of angiotensin-converting enzyme (ACE), a protein produced in the lungs that converts angiotensin I—a harmless molecule—into angiotensin II, the most potent blood vessel constrictor known to science. ACE is pathologically overactive in people with arterial disease. Used for more than 25 years to treat high blood pressure, ACE inhibitors relax blood vessel walls, lower blood pressure, and reduce energy consumption in the heart. They also help protect the membranes of heart muscle cells from oxidation.

ACE inhibitors are typically prescribed if you've had a heart attack. After a heart attack, your left ventricle may have wall motion abnormalities,

meaning that the scarred areas are not contracting with the rest of the muscle tissue. Echocardiograms have shown that ACE inhibitors support the left ventricle so that it works more like a healthy heart, improving pumping ability and what is called ejection fraction (the amount of blood pushed forward with each heartbeat).

Side Effects

The primary side effects include:

- Decreased kidney function
- Decrease in sexual function
- Dizziness, headache, fatigue, and depression
- Liver damage
- Increased potassium levels, which can lead to serious cardiac abnormalities (of particular concern for those taking potassium preparations or potassium-sparing diuretics).

Some patients (more often women than men) taking ACE inhibitors may develop a troublesome dry, hacking cough as a side effect, but this may be alleviated by switching to a newer generation of the medication.

Alternatives to ACE Inhibitors

- **Hawthorn berry** (500 mg two to three times per day) increases blood flow in smaller vessels, acting much like ACE inhibitors, as it decreases blood pressure.
- **Garlic** (500–1,000 mg daily)
- **Calcium** (1,000 mg daily), **magnesium** (400 mg daily)
- **CoQ10** (100–300 mg daily in divided doses)
- **Fish oil** (2–4 grams per day)
- **L-arginine** (2–3 grams three times per day).

Calcium Channel Blockers

Calcium channel (CC) blockers (Isoptin, Calan, Verelan, Norvasc, Procardia) are often prescribed to lower heart rate, contractility, and blood pressure. They also are prescribed to improve blood flow and improve vascular tone through

narrowed vessels. Some calcium-channel blockers are even endothelial-cell friendly—that is, they encourage smooth-muscle relaxation in the inner lining of your blood vessels, preventing spasms and helping them dilate.

Side Effects

There are many side effects of CC blockers. These include:

- Ankle swelling
- Headaches
- Dizziness
- Weakness
- Fatigue
- Lung congestion
- Nausea
- Heart palpitations
- Abdominal cramps
- Diarrhea or constipation

Talk with your physician if you have any of these complaints. These drugs may also actually cause a heart attack. There's a higher risk of side effects and toxicity if taken with grapefruit.

⚠ Caution: Be careful when you combine calcium-channel blockers with digoxin for treatment of congestive heart failure and atrial fibrillation. Some of the calcium-channel blockers can increase the digoxin in your blood to dangerous levels. This can cause nausea, vomiting, loss of appetite, or “heart block,” a serious condition whereby your heart rate can slow dangerously. Again, check with your physician.

Alternatives to Calcium Channel Blockers

You may be able to reduce your reliance on these medications by taking **magnesium** (400–800 mg), **potassium** (500–1,000 mg), and **calcium** (500–1,000 mg). Do not take these minerals if you have kidney problems. You must talk to your physician. Do not reduce or stop taking your anti-arrhythmic drug without your doctor's consent and guidance. If you cannot tolerate calcium-channel blockers, ask your doctor about beta blockers.

Beta Blockers

Beta blockers (Propranolol Hydrochloride, Timolol, Metoprolol, Atenolol, Nadolol) are among the safest of all cardiac drugs. They lower blood pressure, relieve angina, and help prevent damage to the heart when oxygen flow is reduced. Many people have mini heart attacks, sometimes during their sleep, that go undiagnosed. These events can cause microscopic scarring of the heart muscle. Such scar tissue sites can become the focus of cardiac arrhythmias and increase the risk of sudden death. Taking beta blockers after a heart attack protects against these arrhythmias, and thus subsequent cardiac events.

Despite their side effects, I prescribe them for high blood pressure, congestive heart failure, and atrial fibrillation. Beta blockers are one medication that you probably shouldn't ditch for a natural alternative; however, if you experience undesirable side effects, tell your doctor immediately so that you can work together to reduce your dosage or find a suitable alternative.

Side Effects

The side effects of beta blockers include:

- Erectile dysfunction
- Sleep disturbances
- Fatigue
- Dizziness
- Flu-like symptoms

If you have asthma, you should not take beta blockers because they can lead to bronchospasm in asthmatics. Beta blockers should also be avoided by people who suffer from depression. Finally, beta blockers deplete your body's levels of CoQ10, but you can counteract that effect through supplementation.

Nitroglycerin

Nitroglycerin and its derivatives, such as patches and/or long-acting nitrates taken in pill form, are potent dilators of the coronary arteries, enhancing blood flow to the otherwise blocked segments of the heart muscle. Nitroglycerin helps keep arteries dilated and discourages dangerous

spasms. In addition, by temporarily causing blood pooling in the extremities, nitrates reduce blood pressure and allow the heart to function on less oxygen.

Nitroglycerin offers relief for angina symptoms such as chest tightness, discomfort or pain, burning sensation or shortness of breath. Some patients use nitroglycerin prior to activities that may trigger these symptoms, such as before having sexual relations, taking a walk, or even just before the first hole of golf.

When administered under the tongue, nitroglycerin is absorbed within seconds and its action peaks in one to two minutes. The drug is not habit forming.

Side Effects

Because nitroglycerin can reduce blood pressure quickly, you may become dizzy or light headed if you stand immediately after taking it, use excessive alcohol, or become overheated in a poorly ventilated area. Take nitroglycerin only when you are sitting down, and avoid standing up abruptly. In addition, avoid excessive temperature changes, poor ventilation, and alcohol consumption before taking nitroglycerin.

Digoxin (digitalis)

Used in this country for over six decades, digoxin (digitalis) is prescribed to control the heart rate in patients with arrhythmia and atrial fibrillation. It helps slow the heart so it can fill and empty better. Digoxin also increases the strength of the heart's contractions. By improving the heart's pumping ability, digoxin can help clear the body of excess lung fluid that builds up in patients with congestive heart failure.

Side Effects

When taken in excess, digoxin-type drugs have more side effects than any other cardiovascular medication and can cause sudden death in cases of severe overdose. Although digoxin is prescribed to treat arrhythmia, it can sometimes trigger one instead. Additionally, it can:

- Deplete your body of B vitamins and the minerals calcium, magnesium, and potassium when taken with an excess of caffeine and alcohol.
- Cause nausea, vomiting, diarrhea, blurred vision or seeing yellow halos, headaches, and hallucinations or psychosis.
- Interact with quinidine or procainamide, antacids, antibiotics such as neomycin or tetracycline, cholesterol-lowering drugs, diuretics, steroids, and the herbs St. John's wort and licorice.
- Slow the heart too much if taken with large doses of vitamin E (more than 800 IU) and magnesium (more than 800 mg).

Alternatives to Digoxin

Hawthorn berry is often used as a substitute for digoxin in Europe for a wide range of heart conditions, including arrhythmia and congestive heart failure. Hawthorn berry is an excellent alternative for those who can't tolerate even small doses of digoxin.

⚠ Caution: As I mentioned in Chapters 3 and 5, I don't recommend taking hawthorn berry if you're on digoxin because of their similar effect on the heart. If you feel you need to take them together, do so only under a doctor's guidance.

Diuretics

If you have a history of heart attack, congestive heart failure, or high blood pressure, you may be on diuretics such as indapamide (Lozol) or furosemide (Lasix). These agents lower blood pressure indirectly by increasing urine output, which clears excess fluid from the body and lungs. Unfortunately, increased urination also promotes excretion of more than the usual amount of sodium, potassium, magnesium, and water—all of which are vital for enzymatic processes throughout the body.

As many as 40 percent of adults over age 65 are taking diuretics; some folks have been taken them for many years. However, I don't like diuretics as a long-term approach to treating heart failure, and a number of small studies

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have indicated that their continuous use may be potentially harmful. I have the same concern about the conventional treatment of hypertension, in which diuretics are used to reduce the amount of fluid flowing through the blood vessels and, thus, the pressure against the arterial walls. I believe that such long-term use will be increasingly challenged and eventually discouraged because of the mineral-wasting risks.

Side Effects

Potential side effects include:

- Loss of appetite
- Drowsiness
- Lethargy
- Confusion
- Muscle cramps
- Gastrointestinal problems (upset stomach, nausea, and diarrhea)

As I indicated, the most common side effects are dehydration and loss of electrolytes, most significantly potassium and magnesium. I'm especially concerned about the potential loss of magnesium, a mineral that's absolutely essential for healthy heart function. There's also a link between lower levels of potassium and stroke risk (see Chapter 7 for more information.)

If you take diuretics, especially Lasix or Bumex, it's imperative that you supplement with magnesium (400–800 mg/day) and potassium (99 mg three times/day). Because the amount of potassium you can get in a supplement is limited, I also recommend that you eat potassium-rich foods such as raisins, prunes, apricots, papaya, dates, avocados, bananas, strawberries, watermelon, cantaloupe, oranges, beets, greens, spinach, peas, squash, tomatoes, mushrooms, baked potato, beans, peas, turkey, fish, and chicken.

Alternatives to Diuretics

For people with heart failure, there are no alternatives to standard, conventional diuretics. For those with mild water retention, I would consider the following alternatives:

- Drink **ginger tea** daily.
- Take **uva ursi extract**, 100–200 mg daily. This herb is from the bearberry evergreen shrub. The active compound in uva ursi is arbutin, which increases the excretory power of the kidney.

Coumadin

Coumadin (warfarin) is the most frequently prescribed anticoagulant because of its unparalleled ability to thin the blood and prevent blood clotting. Its primary purpose is to prevent stroke. More specifically, studies have shown that Coumadin can protect you from a stroke if you have:

- Mechanical or prosthetic heart valves (their surfaces encourage blood platelets to stick to them).
- Suffered an embolic stroke, one of three types of stroke caused by a fragment or clot of blood pumped from the heart to the brain.
- Atrial fibrillation, where atria fail to contract; blood forms pools and becomes sluggish.
- Had an extensive heart attack (scar tissue weakens heart muscle tissue, which in turn weakens contraction of the left ventricle, possibly allowing blood to stagnate and clot).

One of the most common questions I get from both patients and subscribers is "Do I have to stay on Coumadin?" There's something about Coumadin that elicits an "anything but that" response from about half the folks who are on it. Many of my patients have asked to discontinue Coumadin because, in addition to the side effects, they dislike the nature of the drug (it's used as rat poison in high quantities) as well as the discomfort and inconvenience of blood tests every 4–6 weeks.

But if any of the above scenarios apply to you, Coumadin is your best therapy, and you must stay on it. The medication has a stellar track record of protection against stroke, and that undisputable fact guides me whenever a patient asks me about stopping the drug. That's why I take the time to dissuade patients at high risk for stroke from stopping the medication.

Coumadin and Supplements

Doctors prescribing Coumadin sometimes tell patients not to take **any** vitamins. I disagree with that blanket statement. I've prescribed Coumadin **and** supplements to patients for more than two decades without problem. Vitamins are too important for health maintenance and well-being to simply discard, especially for chronically ill patients in need of extra nutritional support.

Still, there are some nutritional supplements you should avoid if you're taking Coumadin. Here are some points to keep in mind:

1. Coumadin works by antagonizing (that is, counteracting) the action of vitamin K, a nutrient used by the body in the normal clotting process. Thus, many doctors tell patients on Coumadin to avoid foods rich in vitamin K, such as green leafy vegetables, radishes, cabbage, broccoli, spinach, kale, beans, and asparagus. They believe that the vitamin K will interfere with the effectiveness of the medication. But I've had patients on Coumadin eat a diet rich in vitamin K, and I rarely saw any problem with the effectiveness of the medication.

If you wish to include vitamin K-rich foods in your diet, and you're on Coumadin, just try to maintain a steady intake of those particular foods, and routinely have your blood checked and your dose adjusted accordingly. Your doctor can always make an adjustment in the medication if necessary, and you won't miss out on the important benefits of vitamin K.

2. At a very high dosage (600 IU or more a day), vitamin E can possibly interfere with Coumadin. However, I believe that supplementing with 200 IU daily is safe. I have never seen an interaction at this level.
3. More than 6 grams a day of fish oil has been shown to create a bleeding vulnerability. I recommend no more than 1–3 grams to my patients on Coumadin. There's no problem at all at that level, and fish oil is good for you all around.
4. You should not take nattokinase while on Coumadin because both products act on fibrin, and the combination may result in your having too little fibrin to form any clots at all.
5. Being a good Italian who loves the Mediterranean diet, I love garlic. However, garlic and Coumadin are not particularly good bedfellows. Garlic has a blood-thinning effect of its own, and the two together can make the blood too thin. It's best to avoid garlic on a regular basis if you take Coumadin, but occasional consumption should be fine.
6. Ginkgo is widely used for moderate Alzheimer's disease and vascular-related dementia. The herb inhibits clotting activity to some degree. Thus, to avoid excessive bleeding, don't take ginkgo with Coumadin.
7. St. John's wort (*Hypericum*), a popular herb used for mild to moderate depression, should not be taken by patients on Coumadin. It may weaken Coumadin's therapeutic effect by promoting certain liver enzymes that clear medication from the body faster.

There are some risks in taking Coumadin. Research in Europe suggests a possible side effect that may accelerate arterial calcification. Still, I continue to use this medication for high-risk patients—especially those with prosthetic valves who have a tendency to form clots. For those patients, the benefits of taking the drug outweigh the risks. However, I'm more reluctant than before to prescribe Coumadin for patients who have calcification but who do not have any additional symptoms that put them at high risk for clots.

Although I insist that most of my patients with atrial fibrillation stay on Coumadin, there is one exception. People with "lone" atrial fibrillation, which means your heart is a normal size and has no chamber enlargement or leaking valves—are at low risk for developing clots. These "lone

fibbers" as I call them are good candidates for alternative blood-thinners. (For more on the use of Coumadin in atrial fibrillation patients, see Chapter 4.)

Side Effects

The major side effect from anticoagulants such as Coumadin is that it may work too well and cause excessive bleeding and hemorrhage (bleeding gums, eye hemorrhage, blood in the urine, and even bleeding in the brain). Other side effects include:

- Weakness, cold sensations, itchy skin, fever, abdominal discomfort
- Easy bruisability
- Wounds and cuts take longer to heal.

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Indeed, blood-thinning is a double-edged sword. While anticoagulants help prevent thrombotic and embolic strokes, the risk of a hemorrhagic stroke (caused by bleeding, not a clot) is higher for those on Coumadin—particularly those over age 85. There's a heightened risk of bleeding among those older than 85 because their blood vessels are more brittle and susceptible to rupture.

Alternatives to Coumadin

For patients with “lone” atrial fibrillation and others at low risk for developing blood clots who are not currently on Coumadin, and for those over age 85, I recommend the following natural blood thinners:

- **Fish oil** (2–3 grams daily)
- **Garlic** (1–2 grams daily in capsule form)
- **Nattokinase** (100 mg daily)
- **Vitamin E** as mixed tocopherols (200–300 IU)
- **Bromelain** (an enzyme derived from pineapple—600 mg)

Aspirin

Aspirin is frequently prescribed for the management of cardiovascular disease. Aspirin is an anti-platelet and therefore anti-clotting agent with the ability to prevent heart attacks in people with severe blockages. In the Physicians' Health Study involving 22,071 male physicians ages 40 to 84, a 44 percent reduction in acute heart attack was noted in those older than 50 years of age who took one aspirin every other day. It also helps reduce CRP levels, which lowers the risk of inflammation, resulting in fewer cardiac events. Generally, I reserve aspirin for those with a history of coronary artery disease, heart attack, bypass, or angioplasty, and I use more natural blood thinners for prevention.

Aspirin is also used to prevent ischemic stroke. But aspirin is less effective than Coumadin for preventing clots and strokes. For those highly vulnerable to clot formation or stroke related to clot dislodgement, aspirin is a second choice.

Many people take either a low-dose aspirin (81 mg) or a full-dose aspirin (325 mg) to reduce risk of an ischemic stroke and a second heart attack

(called secondary prevention). But here's the flip side to this blood thinner: Several studies have shown that aspirin can increase the risk of a hemorrhagic stroke (triggered by a leaky blood vessel in the brain). In the final analysis, however, the benefits of preventing heart attack and ischemic stroke may outweigh the risk of a hemorrhagic stroke.

Side Effects

Not everyone can take aspirin. Aspirin has incredible side effects—such as gastritis and gastrointestinal (GI) bleeding. In fact, aspirin is the most common cause of GI bleeding. Stay away from aspirin if you have GI problems, a history of hemorrhagic stroke, bleeding ulcers,

Will Aspirin Work for You?

Though doctors prescribe aspirin for both primary and secondary prevention, there is much debate about the most effective minimum dosage. For example, does a patient need one low-dose aspirin (81 mg), two low-dose aspirins, or one full-dose aspirin (325 mg)? This confusion comes out of research suggesting that not all patients respond to aspirin in the same way. In fact, some patients don't respond to aspirin at all. They're called “aspirin resistant.”

These challenges may now be overcome with a new test called AspirinWorks. A simple urine sample can show your doctor whether aspirin therapy is effective for you—as well as what dose you need. This test measures the levels of thromboxane metabolites in your system.

What does that mean for you? If your test results show a low level of metabolites, it means your prescribed aspirin therapy is working. If your results are higher up the scale, you would likely benefit from increasing your dosage. If your results are very high, however, and you're already taking the maximum dosage of aspirin, you are probably aspirin-resistant. In that case, it's best to stop the daily aspirin and not risk the gastrointestinal side effects.

To learn more about AspirinWorks, go online to www.aspirinworks.com. There you'll find information you can share with your doctor in the event he or she hasn't heard about the test. You can also order the test directly from HealthCheckUSA (www.healthcheckusa.com or 800-929-2044), but be aware that it is more likely to be covered by insurance if ordered by a physician.

hemorrhoids, or bleeding into the eyes. Aspirin is also out for diabetics with retinal disease. In fact, asthmatics should avoid aspirin because it may precipitate an asthma attack.

What's more, I don't recommend aspirin if you're trying to prevent heart disease (called primary prevention). While some doctors are comfortable endorsing aspirin for patients with multiple heart disease risk factors, I am not because of the side effects I've just mentioned. I do, however, endorse chewing on aspirin if you think you may be having a heart attack.

Statins

Finally, I want to touch on statins, the blockbuster cholesterol medications. Commonly prescribed statins include Zocor (simvastatin), Lipitor (atorvastatin), Mevacor (lovastatin), Pravachol (pravastatin), Lescol (fluvastatin), and Crestor (rosuvastatin calcium). In selected patients, statin drugs can improve quality of life and may even save your life.

In addition to their cholesterol-reducing effects, statin drugs have been known to help stabilize plaque in acute coronary syndromes, so it's logical to me that they have a probable impact on the calcification process and may also prevent plaque ruptures. One study found that patients who were on statins when they were hospitalized for acute coronary events and had these medications discontinued while in the hospital were nearly three times as likely to have a non-fatal heart attack or die as their counterparts who continued to take their statins. Something about statins obviously assists in stabilizing unstable plaques.

Research has also shown that statins are effective in reducing markers of inflammation such as C-reactive protein (CRP) and that this anti-inflammatory effect reduces risk of stroke. In a study at the VA Hospital in West Roxbury, Massachusetts, doctors monitored inflammatory markers (CRP, serum amyloid A, and interleukin-6) in nearly 3,000 patients with acute coronary disease. They found that the risk of stroke was greatest among patients not taking statins—not surprisingly, the group whose

Should You Take a Statin?

Consider taking a statin drug if you have one or more of the following, regardless of your cholesterol levels:

- Coronary artery disease (CAD) or peripheral vascular disease
- A diagnosis of angina
- Had angioplasty or a stent procedure
- Had coronary bypass surgery
- Had a heart attack or stroke
- A coronary calcium score greater than 1,000 (as determined by EBCT scanning)
- Any elevated markers of inflammation such as C-reactive protein, homocysteine, fibrinogen (One elevated marker is cause for concern; two or more elevated markers are very serious, and you must take action immediately.)

Consider taking a statin drug if you have high cholesterol levels and one or more of the following:

- Lost a parent or sibling to sudden cardiac death
- A parent or sibling who had a heart attack at age 49 or younger
- Diabetes plus one or more elevated marker of inflammation

Even if you have high cholesterol levels, I wouldn't recommend a statin for you if you:

- Have no known coronary artery disease
- Have no history of cardiovascular disease among your parents and siblings
- Have no elevated markers of inflammation

inflammatory markers were among the highest—and that the risk increased along with the level of the markers. Treatment with a statin drug significantly lessened the risk.

Based on the research, I believe the integrative medical community agrees that statin therapy has an important place in the treatment of cardiovascular disease. In patients with a history of heart attack, stent, bypass, or angioplasty, or inflammatory markers such as high CRP levels or high coronary calcium scores, statins may be a reasonable intervention regardless of one's cholesterol level. I'm convinced that taking statins after a heart attack reduces your risk of recurrent coronary events because of their ability to reduce inflammation rather than lower cholesterol.

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With that said, the reason I'm so concerned about the over-prescription of statins is because physicians tend to prescribe a statin for healthy men and women with high cholesterol levels, but who are without any history of cardiovascular disease, coronary events, or high coronary calcium scores (greater than 1,000). In my opinion, physicians who treat patients on the basis of high cholesterol levels alone are not practicing smart medicine. Although the use of statins in high-risk coronary patients—especially those with inflammatory markers—is good medicine, the prescribing of these potent pharmacological agents with known and unknown side effects for long-term use in otherwise healthy people is not justifiable.

Side Effects

Despite positive results, I'm troubled by several aspects of this powerful medication. The most common side effects reported by statin users are:

- Muscle pain and weakness
- Flu-like symptoms
- Generalized soreness

Other side effects of statins include: liver dysfunction with elevation of the liver enzymes; problems of the nervous system such as a condition called peripheral neuropathy or polyneuropathy; and total global amnesia, which means forgetting where and who you are for a few minutes to several hours. If cholesterol LDL levels get too low, they can interfere with neurotransmitter mechanisms in the brain.

One of the many problems with statins is that they interfere with the body's production of CoQ10, a natural substance that's absolutely essential for cellular energy production. Such interference causes fatigue, muscle pain, and, as a Swiss study showed, subtle muscle cell damage—even without symptoms. Given that the heart is made of muscle tissue, it's not much of a stretch to think these drugs could lead to diastolic dysfunction and, subsequently, congestive heart failure. Research appears to verify the connection between statins, depletion of CoQ10, and congestive heart failure. I would never take a statin without the added insurance of supplemental CoQ10. Anyone

taking a statin drug for an appropriate reason should be chasing it down with a minimum of 200 mg of hydrosoluble CoQ10.

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CHAPTER 9: WHAT ABOUT SURGERY?

People struggle mightily with decisions about surgery, and they often face tremendous pressure from their doctors. In certain cases, such as when the coronary arteries are almost completely blocked, surgery is necessary. You also need to consider the severity of your symptoms and whether they can be relieved through less invasive alternatives. My advice is to base your choice primarily on your overall quality of life.

In this Chapter, I'll focus on the most common surgeries for those with coronary artery disease and angina: coronary artery bypass and angioplasty/stent insertion.

Coronary Artery Bypass

Coronary bypass surgery reroutes, or "bypasses," blood around clogged arteries to improve blood flow and oxygen to the heart. For the most part, this is done by taking a segment of a healthy blood vessel from another part of the body and making a detour around the blocked part of the coronary artery.

Do You Really Need Bypass Surgery?

Having bypass surgery is a quality-of-life decision. Ask yourself and your doctor:

- Where are your blockages located and how severe are they? (If the left main coronary artery is blocked more than 70 percent, or there is 90 to 95 percent narrowing of two or more other major coronary vessels, surgery is necessary.)
- How severe are your symptoms? Do you suffer frequent bouts of angina or shortness of breath after minimal exertion?
- Can you live your life comfortably with them?
- Can you do anything (medication or lifestyle changes) to diminish your symptoms without surgery?

Over the years it has become clear to me that rather than a cure, bypass surgery is actually an opportunity to escape your painful symptoms, so you can begin to participate in your own care and take responsibility for healing yourself.

Consideration for bypassing clogged arteries is a delicate matter, and I'd agree that the tendency to be "knife happy" must be resisted; the risk of complications such as infection, congestive heart failure, neurological consequences, and even unintentional death are huge reasons to pursue surgery only when it's essential.

When Should You Have Bypass Surgery?

Even the most highly trained cardiologist or cardiac surgeon may recommend bypass surgery when a more conservative approach might be reasonable, so allow me to describe my reasoning when I'm asked for a second opinion. When people consult with me about the prospect of surgery, they usually bring me their medical histories, angiography reports, and stress test/echocardiogram results. Based upon this information and the symptoms they exhibit, I help them reach a decision. Essentially, I look at these important parameters: their coronary anatomy (to assess for narrowing of the left main coronary artery and the extent of blockage); how well their hearts pump (aka left heart/ventricular function); arrhythmias; and symptoms.

Other than when the extent of blockage gives me no choice other than to recommend surgery, quality of life influences my decision the most. I'll recommend surgery when blocked arteries lead to an unsatisfactory quality of life or a high risk of heart attack. "Unsatisfactory" in this case means frequent bouts of angina; shortness of breath with minimal exertion (often referred to as an anginal equivalent); or the inability to walk up a short flight of stairs, enjoy a game of golf, or play with the grandkids. Although a good supplement regimen can help improve these symptoms, folks whose lives are so limited aren't in a position to wait for the gradual relief that the right supplements will generate. I recommend bypass for these patients. They need to fix their plumbing first and view alternative options as a means to prevent disease from recurring.

Amazingly, there are patients who have effective heart function and a good quality of life despite being riddled with coronary artery disease. We look at their angiograms and wonder how they do so well when their vessels look like rosary beads. I take a wait-and-see approach in these situations. Oftentimes, the right combination of supplements and medication can jumpstart improvement.

The bottom line is that invasive intervention offers the most significant benefit to those deemed to be at the highest risk. However, in patients whose coronary artery disease is more stable and who are at less risk, then certainly alternative therapies are justified.

Keep Your Heart Beating—The Best Way to Bypass

If bypass surgery is your best option, you want to make sure your surgery is as low risk as possible. At this point in its evolution, bypass surgery is considered very safe. But no invasive surgical process is without some inherent risks, so surgeons and researchers are constantly striving for something better to lower the risks. Advances in techniques for bypass surgery are ongoing.

One of the more recent advances is off-pump coronary artery bypass (OFCAB). Also referred to as “beating heart” bypass, OFCAB eliminates the need for the heart-lung or cardiopulmonary machine (CPM) during surgery. Thanks to incredible technological discoveries, surgical methods have been developed to stabilize areas of the beating heart while local arteries can be bypassed. This method, involving the use of special, strategically placed “prongs,” enables a greater number of patients to undergo bypass surgery and face fewer surgical risks.

Both on- and off-pump coronary artery bypass operations have a very low risk of death, stroke, and heart attack. But research indicates that OPCAB is associated with even fewer cases of death, stroke, and heart attack during surgery, a lowered incidence of brain swelling, dialysis, wound infection, and less need for post-operative red blood cell transfusion. Plus, patients’ hospital stays are shorter (4–6 days versus 7 days

Post-Bypass Arrhythmia Prevention

Researchers in the UK reviewed 107 papers on the subject of OPCAB, 18 of which provided sound evidence that OPCAB significantly reduced the incidence of another common post-operative complication: atrial fibrillation (AF).

One study showed that people with higher baseline preoperative C-reactive protein (CRP) levels are more likely to develop post-operative AF, whether on- or off-pump, but that overall, OPCAB patients did better.

I believe the argument that inflammation—caused by the CPM machine, the actual physical handling of the heart, and the cutting of the arteries during bypass—is the probable cause of post-op arrhythmia, regardless of which procedure is chosen.

For this reason, I give my patients who are anticipating bypass surgery two grams of fish oil daily to help prevent peri-operative AF; I have them discontinue that dose two days before surgery so that their blood doesn’t become too thin. And a study published in the *Journal of the American College of Cardiology* reported that a daily post-operative dose of approximately 1.6 grams of fish oil reduced the incidence of post-op AF by 54.4 percent, so I would certainly do that, too.

for standard bypass) and their recoveries are quicker (2–4 weeks versus 6–8 weeks for standard bypass).

If you have a choice between traditional bypass and OPCAB, I recommend going with OPCAB, unless other conditions preclude this. (Contraindications to OPCAB are the presence of multiple unfavorable characteristics including an enlarged heart, low ejection fraction (<25 percent), small vessels, and vessels with diffuse disease.)

Maximizing Your Recovery

Regardless of which bypass surgery is done, ask your physician to check your CRP levels before surgery (see the box above). In addition, ask your physician to work with you in providing both pre- and post-op fish oil supplementation. And because your emotional and spiritual side is just as critical to your recovery as the actual surgery, I also encourage appropriate meditation and positive imagery audio tapes or CDs. These are available from many sources including www.healthjourneys.com.

Another supplement that you should take before surgery is D-ribose. Clinical findings have shown astounding improvements among OPCAB patients who received D-ribose supplementation prior to surgery.

I hope that D-ribose will someday be a standard of care for all cardiac patients in hospitals. It's that good and that important. I recommend that cardiac patients take 10–15 grams of D-ribose daily before they have bypass surgery.

In my own practice, I insist that my patients maximize their ATP production to meet the demands of the heart muscle. I prescribe D-ribose to all of them, along with coenzyme Q10 (CoQ10), L-carnitine, and magnesium—my awesome foursome that boosts ATP production even in the sickest patients. These four natural substances feed starving hearts just what they need, and make a powerful contribution to recovery.

Angioplasty/Stent Insertion

Angioplasty involves opening a blood vessel in the groin, inserting a catheter, and threading it through the femoral artery and into the chest until it reaches the point of blockage in the coronary artery. Once at the spot of the blockage, a tiny balloon is inflated to flatten the clog. A stent (a tiny, flexible metal tube) is then placed there to keep the artery open.

When Should You Have an Angioplasty?

An angioplasty–stent procedure is warranted for patients with advancing unstable coronary artery disease (CAD), and especially in the case of acute coronary artery syndrome (pre-infarction angina) or a heart attack. Make no mistake, if you suffer a heart attack, that means an artery is fully blocked and heart cells are dying off with each passing minute. Under those conditions, an angioplasty–stent procedure—performed within a few hours (preferably within one hour) of the heart attack—is a critical life-saving procedure that enhances the odds of damaged, oxygen-starved heart muscle tissue making a comeback. If you're in the emergency room with these kinds of problems, you must have the procedure immediately.

But most of these “balloon procedures” are performed in non-emergency situations simply to open a clogged blood vessel and relieve chest pain in stable patients—and I've never considered that approach to be smart medicine. Research confirms that angioplasties performed under these circumstances are unnecessary. One study showed that patients with stable angina who had angioplasty–stent procedures and took medication to treat their condition had no less risk of future cardiovascular events than patients on drug therapy alone. The study also found that angioplasty provides only slight and temporary relief from chest pain—the main reason the procedure is performed.

The results of this study reflect what I've seen with my patients over the years. People with stable CAD (stable angina) have a satisfactory quality of life by using drug therapy and making lifestyle changes. So, if your doctor recommends an angioplasty or stent, make sure you do your homework before agreeing. The risk probably isn't worth the potential reward if your disease is stable.

Some cardiologists may prefer angioplasty–stents over open heart surgery, but I disagree when more than one stent is required. Surgical patients fare better than stented patients in both the short and long term, especially those who are diabetic. Even multiple bypasses are better than multiple stents. However, I do endorse the use of a single stent if it means you can avoid having your chest opened up.

If you do undergo angioplasty, remember that it's not a cure. What it does is “buy you time” to you help reverse your CAD and possibly even heal yourself.

How to Increase Success of Your Angioplasty—Preventing Restenosis

The biggest problem with angioplasty is restenosis, or the reclosure of the arteries. Restenosis occurs in about 40 percent of patients treated with balloon angioplasty. Although stent insertion reduces this rate to 25 percent, the reclosure rate is still pretty high. It's clear that stents are not the only answer.

Targeted Nutrients to Prevent Restenosis

The following nutrients help prevent inflammation and offset potential blood clots in the stent, both of which are major factors in restenosis.

If you have a history of successful angioplasty, or a bypass, your regimen should include

- B-vitamins (800 mcg of folic acid, 40 mg of B6, and 200 mcg of B12)
- Vitamin E (200–400 IU)
- CoQ10 (120 mg)
- L-carnitine (2 grams)
- Magnesium (400 mg)
- Quercetin (1,000 mg)

Taken together, these nutrients will help relax blood vessels, inhibit sticky blood and block excessive growth of smooth muscle cells to prevent restenosis. The B-vitamin combination of folic acid, B6, and B12 is particularly important. One study found that this vitamin combination significantly reduced the incidence of restenosis and slashed the need for a repeat angioplasty by 38 percent.

If you're about to undergo a first or repeat angioplasty, you should go a step further and include

- L-arginine (4–6 grams daily)
- Curcumin (250–500 mg daily)
- Fish oil (at least 1,000 mg three times daily)
- L-arginine supports production of nitric oxide, which helps dilate blood vessels, and also keeps blood platelets from clumping together and smooth muscle cells from growing wild.
- Curcumin, which is found in the spice turmeric, has been shown to reduce sticky blood and prevents blood clots in the area of stenosis. In animal studies, curcumin-treated animals had better tissue repair and their wounds healed more quickly when compared to untreated animals. Curcumin also reduces inflammation of the vessel, which can trigger reclosure.
- Essential fatty acids (EFAs) found in fish oil and, to a lesser degree, in flaxseed oil reduce inflammation and platelet aggregation in blocked arteries.

Restenosis typically occurs within three to four months of the procedure, and it may even occur up to a year or more afterwards. The question we cardiologists ask is, "Why do some patients develop restenosis and others don't?" Or to put it another way, "What factors influence the development of restenosis?"

No one knows for sure why restenosis happens. Some think it's a result of the vascular injury and subsequent healing that occurs when the balloon is inflated in the blood vessel. A number of clinical studies have indicated that the tissue damage, scarring, and proliferation of endothelial cells that accompanies healing may result in further shrinkage of the blood vessel. Restenosis can also happen if during the procedure fragmented plaque collapses back into the artery.

Several studies have shown the relationship between HDL cholesterol levels and restenosis. In one study of 68 patients, those with low HDL (below 33 mg/dl) had a higher incidence of restenosis. The "non-stenosis" group had an average HDL level of 45 mg/dl. Higher HDL may inhibit oxidized LDL cholesterol, which can cause

vessels to become inflamed and make them more likely to gunk up again at the site where they were stretched.

Because a high insulin level can also accelerate premature closure of a blood vessel, anything you can do to raise your HDL and prevent insulin release can help prevent restenosis. My primary recommendation is to follow the PAMM diet described in Chapter 11. Eating low-glycemic carbohydrates in combination with healthy fats and proteins can help keep your insulin levels in check. I also recommend a few nutritional supplements to help prevent restenosis (see the box above).

What About Drug-Eluting Stents?

Stent insertion is the most commonly used method to prevent restenosis following balloon angioplasty.

In successful cases, the endothelial tissue lining the artery grows around the stent, incorporating it into the artery wall. In less successful cases, the stent damages the endothelial tissue. This damage makes the endothelial tissue a less effective barrier

between the artery lining and the smooth muscle cells behind it, and a less effective producer of chemicals critical for proper artery health. Without a fully functioning barrier, the smooth muscle grows out and around the stent, forming a scar. Clotting often occurs around the site, too.

Enter the drug-eluting stents. These devices are coated with timed-release drugs that retard the unwanted tissue growth and biochemical reactions that cause restenosis. To further protect the artery and minimize clotting, patients must take an anti-platelet drug such as Plavix. The drug is required for about a month or two after the implantation of a regular stent, but for at least six months after the implantation of a drug-eluting stent.

For six months to a year after insertion of a drug-eluting stent, the rate of restenosis is somewhat lower—but there are still problems. Several studies have reported a small but significant increase in the rate of heart attacks and deaths among patients from 18 months to 3 years after stent implantation. The main reason for these attacks is that many patients stop taking the Plavix prematurely. As a result, patients suffer serious, sudden clotting and re-blocking of the artery. But even people who took Plavix for a year—far longer than is recommended—suffered a heart attack after they stopped the drug.

Based on this research it's pretty clear that if you have drug-eluting stent, you may need to stay on Plavix for the rest of your life. In crystal clear terms: You stay on the drug, or you could die. That's a challenge for several reasons: (1) Plavix is expensive; (2) many patients don't follow their doctors' instructions; (3) any subsequent type of non-cardiac surgery would require you to stop taking Plavix because of the risk of bleeding; (4) you may develop a bleeding ulcer that's aggravated by the Plavix.

Anyone considering a drug-eluting stent should think twice. The extent to which patients need to use blood-thinning medication with these stents is unclear and sometimes dangerous. If you need a stent procedure now or in the near future, talk thoroughly with your doctor about the risks

associated with both types of stents and what the procedure could mean for your future.

Personally, I wouldn't have a drug-eluting stent, and I don't recommend them to my patients. If you need a stent for blockage of a single coronary artery, I recommend the time-tested titanium stent along with the appropriate medication and supplements to help maintain the integrity of your blood vessels. A titanium stent is the only kind of stent that I would have, myself.

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CHAPTER 10: MEDICAL TESTS YOU SHOULD HAVE



In the past, forecasting cardiovascular disease has been as tricky as predicting the weather. But now, new technologies are arming cardiologists with more effective weapons to wage war against this disease. Folks, with today's technology nobody needs to die from cardiovascular disease.

The old standards of checking only your cholesterol, blood sugar, and triglycerides—while still important—are now supplemented by a new array of testing. I've long recommended testing for risk factors such as homocysteine and C-reactive protein. Knowing your risk level is important so that you can begin specific interventions to reduce that risk.

This chapter describes the various tests I use when evaluating and treating my own patients. For each test I will explain why it is important and give you my suggested optimum health ranges. I will also outline recommendations you can use to help improve your scores if they're not in the healthy range.

Blood Tests

1. C-Reactive Protein (CRP)

C-reactive protein (CRP) is a marker for inflammation that is directly associated with atherosclerotic plaque. It's a blood protein that, when found in elevated levels, may indicate heart attack and stroke risk. In multiple studies, CRP has been identified as a potent predictor of future cardiovascular events—and one that is far more reliable than elevated cholesterol levels.

Biological characteristics that are associated with high CRP levels include infections, high blood sugar, excess weight, and hypercoagulability of blood (sticky blood). Any one of these situations literally feeds pro-inflammatory mediators, ratcheting up the chances that you'll develop atherosclerosis.

Fortunately, there is a simple test that your doctor can conduct to find out how much CRP is in your blood. Just make sure s/he uses the high sensitivity test (hs-CRP). This test doesn't take much time; typically, blood is drawn from a vein located either on the forearm or from inside your elbow. The blood is then analyzed in several tests to determine the level of CRP present.

Healthy Zone: Less than 0.8 mg/dL

Sinatra Solutions:

- 1,000 of vitamin C daily in divided doses
- Exercise
- Low-dose aspirin
- Eat cold-water fish a few times a week and/or take 1–2 grams of fish oil daily
- Antioxidants with mixed forms of vitamin E
- 50–100 mg of hydrosoluble CoQ10 daily.

2. Serum Ferritin

Iron is necessary throughout life for stimulating the production of hemoglobin, the red blood cell pigment that carries oxygen to our cells. However, research indicates that iron overload, or hemochromatosis, can actually contribute to cardiovascular disease risk. (Hemochromatosis is an acquired or hereditary defect of iron metabolism in which excess iron is deposited in tissues and not available for oxygen transport.)

Iron is stored in muscles and other tissues, and unless it is lost through menstruation or donating blood, toxic levels can accumulate in your system over the years. One study found that those with excessive levels of ferritin were more than twice as likely to have heart attacks, and that every one percent increase in ferritin translated into a four percent increase in heart attack risk.

To find out if your iron levels are healthy, ask your doctor to perform a special iron test called serum ferritin.

Healthy Zone: Less than 80 mg/L for women; less than 90 mg/L for men

Sinatra Solutions:

- If your results are above 100 mg/L, to help remove the excess iron, donate blood one to three times per year.
- Do not take more than 500 mg of vitamin C per day until your ferritin level has decreased.
- If your level is more than 400 mg/L, ask your doctor to check for hereditary hemochromatosis.

3. Fibrinogen

Fibrinogen is a coagulation-type protein that determines the stickiness of your blood by enabling your platelets to stick together. You need adequate fibrinogen levels to stop bleeding when you've been injured, but higher-than-normal fibrinogen levels have been associated with too much blood clotting and are an independent risk factor for heart disease. By itself, a high fibrinogen level can cause the abrupt formation of a coronary thrombosis—the old-fashioned diagnosis we used to write down for a heart attack.

If you have a family history of cardiovascular disease, you must check your serum fibrinogen level to predict your individual risk. And because the tendency toward a high fibrinogen level can be a genetic trait, be sure to assess your fibrinogen level if any close relative has coronary atherosclerosis. Women who smoke, take oral contraceptives, or are postmenopausal usually have higher fibrinogen levels and should also get this simple test done.

Healthy Zone: 180–350 mg/dL

Sinatra Solutions:

- Eat cold-water fish a few times a week and/or take 1–2 grams of fish oil daily
- 500–1,000 mg of garlic (in capsule form) or 600 mg of bromelain
- Drink ginger and/or green tea
- 100 mg of nattokinase daily.

⚠ Caution: If you are taking Coumadin, aspirin, Plavix, or any combination of these

blood-thinning agents you should not take nattokinase or garlic because you could thin your blood too much.

4. Homocysteine

Homocysteine is an amino acid that causes your body to lay down sticky, artery-hardening platelets in blood vessels. Some homocysteine is normal, but an excess may destabilize atherosclerotic plaque by prompting LDL cholesterol to oxidize.

Homocysteine results from your body's ineffective break-down of methionine, an essential amino acid found in all proteins. Meat, eggs, milk, and cheese have two to three times the methionine that grains and vegetables do.

If you've had a heart attack or other cardiovascular event, you should consider asking your doctor to test your homocysteine levels. Also, if you take drugs that tend to elevate homocysteine—theophylline (for asthma), methotrexate (for cancer or arthritis), or L-dopa (for Parkinson's)—you should be tested.

Fortunately, the availability of homocysteine evaluation has gone up and the price has come down. Measuring homocysteine levels used to cost hundreds, if you could even find a lab that would do it, but newer tests run about \$80 and return results within hours.

Healthy Zone: Less than 9 umol/L

Sinatra Solutions:

- Take 800 mcg of folic acid, 40 mg of vitamin B6, and 200 mcg of vitamin B12 daily
- For individuals with genetic defects in folic acid metabolism, use Metafolin, a patented and highly absorbable form of folic acid
- Eat more beets, broccoli, and garlic.

5. Lp(a)

Lp(a) is a cholesterol particle that can cause inflammation and clogging of blood vessels. Actually, it is an LDL particle that has an adhesive protein surrounding it, giving it sticky properties. According to researchers, Lp(a) deposition in arterial walls causes inflammation because of its repair properties.

Under normal circumstances, Lp(a) is one of the most effective repair molecules in your artery walls. But an elevated Lp(a) level is one of the most dangerous risk factors for atherosclerosis. When it increases abnormally in the bloodstream, it can increase your risk of heart attack up to 25 times. I consider Lp(a) to be a significant indicator of cardiovascular health and the most important form of cholesterol to monitor.

Unlike other components of your cholesterol count, the amount of Lp(a) in your blood is an entirely hereditary factor. So if you have a family history of cardiovascular disease, you should ask your doctor to perform this test.

Healthy Zone: Less than 30 mg/dL

Sinatra Solutions:

- 1–2 grams of niacin (vitamin B3) daily in divided doses
- High doses of vitamin C (1–2 grams) daily
- 100 mg of nattokinase daily
- 2–3 grams of fish oil daily will neutralize the toxic effects of high Lp(a).

6. Interleukin-6

Interleukin-6 is important because it stimulates the liver to produce CRP. The Iowa 65+ Rural Health Study demonstrated that elevations of interleukin-6 and CRP were associated with increased risk of both cardiovascular disease and general mortality in healthy older people. And in addition to cardiovascular disease, we are learning that this cytokine has a strong association with asthma (asthma is the result of airways swelling and constricting, so it makes sense that an inflammatory agent is behind the curtains here as well).

I'm convinced that interleukin-6 may be an even better marker for inflammation than CRP because these "precursor" levels rise earlier. Therefore you should ask your doctor to conduct an interleukin-6 test if you are concerned about inflammation and its impact on your heart. In my own practice, I've started looking at whether or not I can detect changes in interleukin-6 early on in the inflammation process. If inflammation is high, then a more aggressive approach would be required.

Healthy Zone: 0.0–12.0 pg/ml

Sinatra Solutions:

- Take Wobenzym, a commercially prepared combination of enzymes that reduce inflammation. Start with two tablets three times a day. After a week, increase to four tablets three times daily. You can find Wobenzym in health food stores.

7. Cholesterol

The VAP test—short for vertical auto profile—is a more comprehensive lipid test. In my opinion, compared to the standard lipid profile test, the VAP test is far more accurate at identifying how your cholesterol levels may or may not be contributing to your overall cardiac risk.

Merely testing for the amount of total cholesterol, high-density lipoprotein (HDL), and low-density lipoprotein (LDL) doesn't tell you enough. In fact, monitoring at this level is probably only about 40 percent accurate in predicting risk for heart attack. The VAP test, however, is able to break down the most dangerous fractions of cholesterol and provide a more accurate picture of what may or may not be a problem.

Here are just a few of the key readings the VAP test gives you that the standard test doesn't:

LDL Components

High levels of LDL are thought to increase the risk of heart attack. But LDL, up to a certain level, is really a good guy—a sheep slapped with a wolf's reputation. The most common type of cholesterol is LDL—a fatty substance produced in the liver and wrapped in a protein coating that allows it to circulate in the bloodstream. It performs absolutely essential services in the body as a raw material.

LDL is dangerous when it becomes oxidized or is overly present in the form of a small dense particle (known as "LDL-pattern-B"). On the other hand, LDL is less dangerous when it is a large, fluffy, and more "buoyant" particle. The VAP test identifies how much of each kind of LDL you have.

Healthy Zone: 70–130 mg/dL total LDL (however, as outlined above; LDL type is also very important)

Sinatra Solutions:

- If you are tested and find out that your cholesterol is of the small, dense LDL variety, then you must make some changes to your diet and lifestyle. For starters, reduce your consumption of trans fatty acids. Studies have shown that LDL cholesterol particles decrease significantly in size when the consumption of trans fat in the diet increases. Therefore, avoid fried foods as well as margarine and boxed or canned foods, which are often full of trans fatty acids.
- Another way to change your LDL particle size is to take 1 gram of fish oil daily. High quality fish oil containing DHA (docosahexaenoic acid) has a significant impact on increasing LDL particle size.
- If your total LDL is above 130 mg/dL and you have documented coronary artery disease and/or diabetes, then statin drugs are needed.
- See recommendations for Total Cholesterol on page 57.

Lp(a) Level

The VAP test also monitors a subtype of LDL called Lp(a), which, as I mentioned earlier, I consider to be the most dangerous form of cholesterol and the most important to monitor. A significant advantage of having a VAP test to determine your Lp(a) levels is that insurance companies don't cover stand-alone Lp(a) testing, but most will cover the VAP test. (See page 55 for the Lp(a) healthy zone and recommendations.)

HDL Subtypes

A high level of HDL—the so-called good cholesterol—is generally associated with protection against heart attack. However, we now know that HDL can be further divided into subtypes HDL1 and HDL2. Both reduce cardiovascular risk, but HDL2 is far superior and provides more protection than HDL1. The VAP test measures both.

Cardiologists have much more to learn about HDL fractions, and it may turn out that some HDL can be just as harmful, perhaps even more so, than oxidized LDL. We are hearing, for instance, that there are some types of HDL that are pro-inflammatory. This is an area in which we are still learning—and need to learn more yet.

Lipoprotein Particle Profile: A New Test for Measuring Cholesterol

Another cholesterol test that has recently emerged is the Lipoprotein Particle Profile (LPP) offered by SpectraCell Laboratories in Houston, Texas. The LPP has an advantage over the VAP test because its methodology allows for more precise measurements and because it can measure remnant lipoprotein (RLP). To date, no other test has been able to single out this type of cholesterol.

To understand why RLP is so important, you have to remember how arterial plaque forms. When LDL cholesterol penetrates the endothelial wall to make repairs, it can become oxidized. Once oxidized, it stokes the inflammatory process that's under way, calcifies, and eventually becomes part of plaque. RLP works the same way, except it doesn't oxidize. It simply enters the endothelium and begins contributing to the inflammatory process. Clearly, RLP is dangerous. But, until now, lipid tests have not been able to measure RLP because they focus on particles that oxidize. The LPP, however, can measure this inflammatory factor—further improving your doctor's ability to assess cardiovascular risk.

Don't get me wrong—I still recommend the VAP test. In fact, I believe that both of these tests will not only change how we treat cholesterol, but how we talk about it. It's common to hear generalizations such as "LDL is bad cholesterol, and HDL is good cholesterol." But in reality, both LDL (low-density lipoprotein) and HDL (high-density lipoprotein) are far more complex. There are multiple subtypes of both, and some of those subtypes are good and some are bad. You need to be able to identify these subtypes to determine whether your cholesterol levels are increasing your cardiovascular risk.

To have an LPP test, you must ask your doctor to request the collection kit from SpectraCell by calling 800-227-5227. The blood draw may be done at your doctor's office or at an approved lab. Test results will be sent directly to your physician. For more information about the LPP, visit SpectraCell's Web site at www.spectracell.com.

Healthy Zone:

Greater than 15 mg/dL for HDL1
Greater than 25 mg/dL for HDL 2
240–120 mg/dL total HDL for women
35–120 mg/dL total HDL for men

Sinatra Solutions:

- Ask your doctor to test for insulin resistance if HDL is low
- Reduce weight
- Exercise
- Eat fewer high-glycemic carbohydrates
- 1–2 grams of niacin (vitamin B3) daily in divided doses.

IDL (*Intermediate Density Lipoproteins*)

The VAP test measures IDL, a type of blood fat that represents an inherited independent risk factor for heart disease. I had never heard about this substance until recently, proving that even old watchdogs like me can learn new tricks.

Healthy Zone: Less than 20 mg/dL

Sinatra Solutions:

- See recommendations for Total Cholesterol at right.

Triglyceride Fractions

Previous blood tests gave you a total triglyceride level, and anything above 180 was considered a risk. Triglycerides are fat globules in the bloodstream. In a concentrated form, they create the fatty “love handles” around your midsection.

As with LDL and HDL, there are different types of triglycerides, and the VAP test measures the levels of each. The one to be most concerned about is VLDL3, which is the most inflammatory triglyceride. It’s a prime indicator for the progression of coronary artery disease, insulin resistance, and type II diabetes.

Healthy Zone: Less than 10 mg/dL

Sinatra Solutions:

- Lose weight
- Exercise
- Reduce carbohydrate and alcohol consumption

- See recommendations for Total Cholesterol below.

Total Cholesterol

If you aren’t able to get the VAP test and/or your doctor still tests your total cholesterol levels, here’s what you need to know.

Healthy Zone: 125–200 mg/dL

Sinatra Solutions:

- Reduce weight
- Exercise
- Increase fiber in your diet
- 100–300 mg of hydrosoluble CoQ10 daily
- 500–1,000 mg of garlic (in capsule form) or one to two fresh cloves daily.

The bottom line: When your doctor talks about getting your cholesterol checked, insist on the VAP test. Medicare and most insurance plans now cover this test. For people who don’t have insurance, the cost is relatively affordable when you consider the potential health benefits it offers. For more information on the VAP test, visit the Web site www.thevaptest.com.)

8. Blood Viscosity

Blood viscosity—meaning blood thickness—is an overlooked element in blood tests. However, blood viscosity has become an emerging major marker for identifying risk of atherosclerosis. The thicker your blood, the slower it flows through your circulatory system to bring vital nutrients to the cells of your body, and the greater the risk of forming clots. You want your blood to be thin like wine, not sludgy like ketchup.

Many times in cardiology, we actually extract blood from high-risk patients in order to thin their blood and prevent a heart attack. And, of course, Coumadin has been widely used as a standard medication to thin the blood and help prevent clotting.

Knowing the critical nature of this, you can only imagine my excitement when I learned about a device that measures blood thickness. The Rheolog, as it’s called, takes a small amount of a patient’s blood, and within three minutes returns

an analysis in the form of a thrombogenic potential number. The higher your number, the thicker your blood.

I immediately got in touch with Rheologics Inc., a Pennsylvania-based medical research company that manufactures the device, and ordered one for my office. What an addition it is—a great way to help determine cardiovascular risk!

To learn more about this exciting technology and to find a physician in your area who has access to a Rheolog, visit www.rheologics.com.

Sinatra Solutions:

- Whenever I encounter a patient with an elevated blood viscosity score, I immediately put them on fish oil (1–3 grams) and nattokinase (100 mg). Then I add in garlic (1–2 grams in capsule form), vitamin E as mixed tocopherols (200–300 IU), and bromelain (600 mg) as needed to thin down the viscosity.

⚠ Caution: If you have been prescribed Coumadin for a blood thinning effect, do not take garlic or nattokinase, as they may accelerate the effect. Also, don't take more than 3 grams of fish oil daily if you are on Coumadin; up to 3 grams is OK.

- Eat foods that have strong blood-thinning properties: ginger and ginger tea, turmeric, cumin, garlic, onions, green tea, tofu, walnuts, and cold-water fish such as wild salmon.

9. PLAC Test

This blood test can conclusively predict stroke risk. The PLAC test detects the presence of an enzyme that could lead to a stroke. Scientists have identified an enzyme called lipoprotein associated phospholipase A2 (Lp-PLA2 for short) that's involved in the inflammation of blood vessels. This inflammation contributes to both plaque formation and instability. Eventually the unstable plaque can rupture, turning potentially lethal clots and debris loose in your bloodstream—causing a stroke or a heart attack.

Results from the ARIC Study (Atherosclerosis Risk in Communities) performed by the National Heart, Blood, and Lung Institute demonstrated

that folks with elevated Lp-PLA2 had double the risk of suffering an ischemic stroke over a six to eight year period compared to those with low Lp-PLA2. This risk was found for everyone, not just those with other cardiac risk factors such as smoking, diabetes, or obesity. Moreover, when high Lp-PLA2 was combined with elevated systolic blood pressure (more than 140 mm Hg), it created six times the risk of developing a stroke. This result makes it quite clear that anyone with hypertension and elevated Lp-PLA2 needs to take very aggressive preventive measures to avoid a stroke.

If you have risk factors for stroke—especially high blood pressure—ask your physician to do a PLAC test. It's simpler and less expensive than earlier alternatives. The PLAC test is also widely available, even for folks living in more rural areas. Several major medical labs do the PLAC test—including Quest, which has locations in all 50 states. For more information on the test, visit the Web site www.plactest.com.

Sinatra Solutions:

- Address any lifestyle-related risk factors you have
- Eat an anti-inflammatory diet
- Take 1–3 grams of fish oil daily
- For women over 65, take 100 mg of aspirin (equivalent to 1.25 mg baby aspirin) daily
- Drink 1 to 3 cups of green tea and 2 ounces of pomegranate juice daily
- Take 1–2 grams of garlic in capsule form, or one crushed clove a day (but don't do this if you're taking Coumadin).

EBCT: A Lifesaving Advance

EBCT, short for electron-beam computed tomography, is a sophisticated, non-invasive screening procedure for measuring hardened plaque in coronary arteries. EBCT is also proving to be a reliable way to assess heart attack risk in people with no (or few) other known risk factors.

Although all the significant risk factors for coronary artery disease (CAD) are not yet known, the amount of calcium in coronary arteries is

certainly one of them. (By the way, “coronary calcium” refers to calcified plaque, not the mineral that helps build bones, so please don’t stop taking your calcium supplement.) For example, measuring calcified plaque in coronary arteries was shown to be a better predictor of substantial heart attack risk than any of the other cardiovascular disease risk factors identified in the famous Framingham Heart Study: high blood pressure, high cholesterol levels, obesity, cigarette smoking, diabetes, and physical inactivity.

More specifically, research shows that a calcium score greater than 1,000 places an individual in at least the 75th percentile of risk (and perhaps in the 90th percentile or higher) for sudden death due to heart attack. Based on this research, I strongly recommend EBCT as a screening tool for hidden, undiagnosed, or silent CAD.

EBCT is quick—it takes only 10 minutes—safe, painless, and relatively inexpensive. The same cannot be said of other, more invasive and expensive testing methods. You also don’t need a doctor’s prescription to get an EBCT scan.

The downside is that most insurance companies don’t cover EBCT yet, and a mild radiation risk is involved (roughly equal to the risk from taking a round-trip flight between New York City and Los Angeles). Also, EBCT can have many false positives and false negatives. For example, someone who, according to the scan, has calcification may not actually have obstructive coronary disease. Only further testing using more specific, non-invasive or even invasive tests can help ferret out the truth.

Similarly, a negative result from a cardiac scan does not account for the possibility that uncalcified coronary plaque could be lurking in arteries. These “soft plaques” are dangerous, because they have a greater propensity to rupture and cause an arterial blockage than calcified coronary plaque does.

That said, however, we do know that what the scan measures—the amount of calcium in coronary arteries—is useful in predicting the severity of CAD. In fact, many will find knowing their

64-Slice: A New Test for Determining Arterial Health

A test for detecting arterial plaque that is even more advanced than EBCT is called the 64-slice coronary CT scan. This new technique is the non-invasive equivalent of putting a camera inside the coronary arteries and assessing plaque and calcification status. (Note: “Slice” refers to the particular viewing angle, not actual slicing of the arteries.) The 64-slice method provides previously unobtainable visualization of the coronary arteries, with much less radiation and risks than the former gold standard—the invasive angiogram. I have sent many patients to St. Francis Hospital’s DeMatteis Center for Cardiac Research on Long Island, the closest facility to me offering this scan. Results are excellent. If your cardiologist orders a standard, invasive angiogram for you, ask if a 64-slice coronary CT scan can be done instead.

coronary calcium score to be of considerable therapeutic benefit, especially those who:

- Have no symptoms of CAD but have a strong family history of the disease
- Have very high cholesterol or CRP levels and are unsure about going on a statin drug regimen; or
- Women who don’t want to take hormone replacement therapy but have toxic blood risk factors like fibrinogen or Lp(a) that respond favorably to estrogens.

If you don’t have CAD symptoms but you do have multiple risk factors for it, then an EBCT scan may be an appropriate place to start. Your physician or local hospital help line should be able to direct you to a hospital in your area that offers this sophisticated scanning tool. The Imatron Scanner or other equally good equipment is available in most major metro areas. Of course, if you already have symptoms, see a cardiologist as soon as possible; don’t wait around for an EBCT scan.

Sinatra Solutions:

- When patients come to my office with a calcium score above the 75th percentile, I immediately start testing for markers of inflammation like CRP and elevated fibrinogen. If I confirm that inflammation is keeping company

with calcified coronary arteries then I up the ante and move in with immediate medical management and heavy-duty risk factor modification.

- If your scan reveals that you have a high calcium score, especially in excess of 1,000, then you need to get even more aggressive. Bring your test results to your physician so that he or she can order a full diagnostic work-up.
- I also recommend that my patients with a high calcium score increase their vitamin K2 intake. A good dietary source of K2 is cheese. I also recommend taking K2 in supplement form (unless you taking Coumadin or other blood-thinning agents). See Chapter 1 for my specific recommendations.

IMT Analysis: A Scan for Cardiovascular Protection

One of the best screening tools available to cardiologists today is ultrasound imaging of the carotid artery. The measurements obtained from pictures of these crucial arteries to your brain are expressed as carotid artery intimal medial thickness, or IMT for short. Increased IMT is now considered a reliable, independent risk factor for stroke, as well as for CAD.

Whenever medical decisions are made, doctors and patients must look at the “risk/benefit ratio.” Does the benefit of having a procedure or taking a drug outweigh the risks involved? Because of such analysis, healthcare practitioners often prefer to screen patients in a non-invasive way before ordering more invasive testing procedures. In that light, IMT is now as cutting-edge a non-invasive procedure as echocardiography (using ultrasound techniques to get “real time” pictures of such things as cardiac and valve function and heart size) was over 25 years ago.

I’m also committed to using this technology because of its consistent ability to identify soft, transient plaque. Identification of this soft plaque is one of the newer ways to predict who’s at risk for cardiovascular disease, including sudden death. This advantage of measuring soft plaque helps me identify an important risk factor that

could otherwise be totally missed. You see, it’s been observed that people with soft plaques in the artery to the brain are more likely to have soft plaques in the heart as well. They need aggressive lifestyle changes and identification of other risk factors.

Another advantage of the carotid artery scan is that you don’t get the radiation exposure you get with angiography techniques. IMT is a safe and inexpensive method to help predict cardiovascular disease, as well as determine who really needs more invasive tests.

The American Heart Association concluded that carotid artery B-mode ultrasound imaging is a safe, non-invasive and relatively inexpensive means of assessing subclinical atherosclerosis (blockages that don’t present clinical signs and symptoms). The group concluded that for asymptomatic people over the age of 45 years, carefully performed ultrasound examinations with IMT measurement can add substantial information to traditional risk factor assessment.

IMT testing is done in major medical centers, including the Cleveland Clinic Foundation and the Mayo Clinic. Some physicians’ offices carry sophisticated carotid digitally-enhanced B-mode ultrasound technology. This is one test to consider, especially if you have a strong family history of heart disease, multiple cardiovascular risk factors, and/or are super-vigilant about early vascular disease. Often, this test is used with Doppler imaging of carotid blood flow, to determine whether plaque is causing any disturbance. The future for this non-invasive test is bright, and within the next few years, more and more cardiologists will be recommending it to their patients.

**PART III: LIFESTYLE
RECOMMENDATIONS**



CHAPTER 11: THE PAN-ASIAN MODIFIED MEDITERRANEAN DIET



Though eating right can be a lifelong challenge, it is vitally important to your success in overcoming cardiovascular disease. Medical research confirms that how you eat has a more profound effect on how long and how well you live than previously believed.

But what does “eating right” mean? After spending endless hours sorting through an ocean of information, I’ve concluded that an eating plan that combines the high-fiber, healthy-fat, Mediterranean-type diet with traditional Asian cuisine is the way to go. I call this approach to eating the Pan-Asian Modified Mediterranean or PAMM diet.

I’ve been a proponent of the modified Mediterranean diet for years, even before it became fairly mainstream. More recently, I expanded this modified Mediterranean foundation to include the traditional diet followed by people living on the Asian side of the Pacific Rim, which includes fermented soy foods and seaweed. Along with the Mediterranean people, the Japanese have some of the highest life expectancies in the world. Although the two diets may seem a world apart, they have in common an absence of saturated and hydrogenated fats and an emphasis on fish and fresh fruits and vegetables.

Although I call it a diet, it’s really much more than that—it’s a way of eating that I hope becomes a way of life for you. Let me give you some background on how I came to develop the PAMM diet, along with the basics of the diet and the foods it features.

How PAMM Evolved

Like many cardiologists, I used to recommend that my patients abide by the American Heart Association (AHA) guidelines for eating, which at the time featured very low fat coupled with high carbohydrates. These guidelines made sense

when they first came out, because we in the medical establishment were fairly certain that less fat down the hatch would result in less fat in the blood. In addition, carbohydrates were believed to be beneficial or, at the very least, harmless.

Instead, we found that by encouraging people to eat very little fat while indulging in carbohydrates, we actually created a plan for eating that led to excess secretion of the hormone insulin. When you have too much insulin circulating in your bloodstream for too long, chronically high levels of insulin build up. Excess amounts of this hormone signal your body to store sugars and leftover carbohydrates as fat, a condition that can lead to insulin resistance and eventually diabetes.

I’ve seen many people, including myself and my patients, get hurt by these diets. Despite their best efforts on low-fat, high-carb diets, my patients would gain weight and become susceptible to insulin resistance, as indicated by low levels of HDL cholesterol, elevated triglyceride levels, and excess weight around the middle. I saw this happen over and over again. By the mid-1990s, I knew there had to be a better way to eat.

My suspicions were confirmed when the results of the Lyon Heart Diet Study were published. In the Lyon [France] trial, 605 heart attack survivors were assigned to eat either a Mediterranean-style diet or a low-fat diet then recommended by the AHA. Four years later, participants following the Mediterranean-style diet were 50 to 70 percent less likely to have had repeat cardiac events. Best of all, there had been no sudden deaths in this group.

The Key: Omega-3 Fatty Acids

Given such striking differences, I was eager to pinpoint exactly what it was about the Mediterranean diet that made it so much healthier. The key appeared to be essential fatty acids (EFAs), particularly omega-3 fatty acids. EFAs, which

Reverse Your Deadly Heart Problems NOW

cannot be manufactured by the body (hence the name “essential”), penetrate layers of cholesterol-laden plaque, soothing inflammation in blood vessels and preventing blood-clotting deposits from lining coronary arteries. These EFAs can also prevent spasm of coronary blood vessels and the rupture of plaque.

Americans typically eat only about 120 mg omega-3 fatty acids per day. By comparison, the Japanese consume an average of 600 mg a day, primarily from fish and seaweed. It’s no coincidence that the Japanese have a far lower rate of cardiovascular disease than we Americans do. The high amount of omega-3 fatty acids is thought to be the reason for the difference.

The typical Western diet is rife with refined carbohydrates, animal proteins, and omega-6 fats, but includes few, if any, omega-3s. Omega-6 fats are easy to obtain from your diet because they’re abundant in oils from safflower, corn, and soybeans, and are included in many processed foods. In fact, Americans consume 20 times more omega-6 fats than omega-3 fats, when we really need closer to a 1:1 ratio. Although we need some omega-6 fats in our diet, an excess can be harmful. I believe one of the reasons we have so much cardiovascular disease is because of this imbalance in omega-3 and omega-6 fats.

Omega-3s are more challenging to get from food because there are fewer sources. One of the best sources is fish, especially the fattier varieties, because they contain two particularly important omega-3s: docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA). Both DHA and EPA rejuvenate the body at the cellular level and help reduce inflammation and blood clotting.

In this context, the advantage of the Mediterranean diet is clear. It, along with the diet favored along the Pacific Rim, emphasize eating fish that are rich in DHA and EPA.

Eat Like a Greek—With Modifications

The problem with exporting the Mediterranean-style diet to Westerners is that we tend to

Playing It Safe With Fish

Although fish is an integral part of my PAMM diet, it’s not risk free; you must be picky about the catch. Large, long-lived, ocean fish like tuna and swordfish tend to contain heavy metals, most notably mercury. The landlocked variety, like lake trout and catfish, contain industrial pollutants, typically polychlorinated biphenyls. I recommend that you eat any of these types of fish only once a month or less. You’ll be even safer if you cut out the dark, fatty meat of these fish before eating them. Fat is where fish, like humans, stash pollutants.

Wild salmon is one of the best sources of essential fatty acids and is safe to eat two to three times a week. (I’m not comfortable with regular consumption of farm-raised salmon because of the synthetic dyes in it and greater potential for contamination.) Others in my approved group include anchovies, sardines, mackerel, whitefish, halibut, sea trout, flounder, sole, mahi mahi, haddock, scrod, and cod.

embrace the parts of the plan we like—cheese, olive oil, breads, and sauces flavored with meat—and ignore the whole grains, fruits, vegetables, fish, and legumes. If you simply add olive oil and bread to your usual diet, rather than substituting them for unhealthy fats and refined carbohydrates, all you’re likely to get is a higher cholesterol level and a wider waistline.

The other problem with the traditional Mediterranean diet is that it’s a little heavier on the carbohydrates than I generally recommend. It also relegates eggs to the “few times per week” category, whereas I believe you will be fine eating eggs on a regular basis, as long as they come from free-range chickens raised on organic feed. Eggs are one of the best sources of choline, which is very good for your circulatory and neurologic systems. Eggs also contain the omega-3 fatty acid DHA, which helps neutralize their cholesterol.

You should also be careful when adopting the Asian style of eating. One of the drawbacks to the typical Japanese way of eating is the frequent consumption of white rice. White rice is a high-glycemic food, no doubt about it. (By high-glycemic I mean that it will cause sharp peaks and valleys in your insulin levels if not tempered with other, higher-protein foods.) But in their defense,

the Japanese eat only small amounts of white rice, and usually along with fish, soy protein, and other nutrient-dense, low-glycemic foods.

The PAMM eating plan consists of 45 to 50 percent slow-burning, low-glycemic index carbohydrates; 30 percent healthy fats; and 20 to 25 percent lean protein. It includes fresh fruits and vegetables in season (eat organic as much as possible), fish, and whole grains. Meat is used sparingly, often just enough for flavoring. Meals are based on numerous small portions for lots of variety, and the lightest meal is at the end of the day, when the body is quieter and the metabolism slower. See the box below for specifics on the foods included in the PAMM diet (as well as the foods that you should stay away from).

Eat Fiber for Healthy Arteries

In addition to being rich in omega-3 fatty acids, the PAMM diet also emphasizes eating high-fiber foods such as whole grains, fruits, and vegetables. Research has shown that increasing fiber intake is an effective and easy way to protect your heart and arteries. One study found a stunning 29-percent reduction in heart disease for every 10-gram increase in fiber.

Soluble fiber, you see, helps prevent the absorption of cholesterol. It essentially soaks up cholesterol into a gelatin-like form that your body can't absorb. Insoluble fiber, which is also great, helps cleanse the colon and decrease transit time in the intestines so more cholesterol is eliminated.

For optimal health, you need at least 30 grams of fiber a day. If you follow my PAMM eating plan it is easy to get this much fiber each day. For example, citrus fruits such as oranges (be sure to eat all the white pulp) contain pectin, an excellent fiber source, and provide between 3 and 5 grams of fiber. One pear or apple (with the skin on) also provides 3–5 grams. Beans (kidney, navy, and baked beans) are one of the best sources of fiber; one cup contains between 7 and 11 grams.

(Grapefruit is the one high-fiber fruit I'd really caution you about. Scientists believe that grapefruit inhibits the system in your body responsible for metabolizing many medications. The result is that you can get higher levels of the drug in your blood than you or your doctor anticipated. To be safe, if you're on any kind of drugs, don't eat grapefruit or drink grapefruit juice.)

PAMM Diet Guidelines

Increase your intake of:

- Oatmeal and complex carbohydrate pastas made with whole wheat, spelt, or Jerusalem artichoke
- Vegetables such as asparagus, broccoli, kale, Brussels sprouts, and spinach
- Legumes such as lentils, soybeans, and chickpeas
- Fresh herbs such as rosemary, thyme, and basil
- Onions and garlic
- Fruits such as cherries, peaches, plums, strawberries, blueberries, apricots, pears, and apples (melons, grapes, and kiwi are suitable, but they contain more sugar)
- Sources of EFAs and protein, such as cold-water fish (especially fatty ones) and organic eggs
- Fermented soy products like miso, tempeh, and natto
- Healthy fats such as olive, sesame, walnut, and avocado oils
- Nuts and seeds, including walnuts, almonds, chestnuts, and flax seed

- Low-fat cottage cheese, feta cheese, and grated Parmesan

Decrease your intake of:

- Foods containing refined white flour or sugar such as breads and bagels
- Partially hydrogenated oils, found in commercially prepared crackers, cookies, chips, and other snacks
- Starchy vegetables such as corn, peas, and carrots
- Canned vegetables, because they're usually very high in sodium
- Processed fruit juices, which are often loaded with sugars
- Organ meats
- Cashews—they're higher in saturated fat than other nuts
- Omega-6 oils such as corn, safflower, sunflower, and canola
- Full-fat dairy products, including whole milk and many cheeses

My Favorite Foods for Heart Health

Pomegranates

In addition to their fiber content, fruits and vegetables derive their heart-protective qualities from the antioxidants and phytonutrients (carotenoids, flavonoids, and polyphenols) they contain. One of the richest sources of these nutrients is the pomegranate. Research has shown that the antioxidants and phytonutrients in pomegranates can help slow down the development of arterial plaque, prevent LDL cholesterol oxidation, and reduce blood pressure.

Pomegranate juice is not inexpensive, but don't worry. The taste is so sweet and tart that few of us would want to gulp down a glass the way we do other juices. A little goes a long way! Most studies looked at daily doses of 50–60 mL, which is the equivalent of an 8-ounce juice glass. I like to dilute pomegranate juice in about 8–12 ounces of filtered, or even sparkling, water. It is also great to add to other organic juices or make in your own juicer at home.

You can find pomegranate juice in health food and some grocery stores. Select one that's all-natural, with no added sugars or artificial ingredients.

Nuts

At times when my travel schedule has been so hectic that I did not have time to eat a healthy meal and had to grab something on the run, I'd go to the nearest health food store and buy some nuts. But the decision to buy nuts was not only inspired by expediency—it was also influenced by research I'd read about the Seventh Day Adventists. As a specific segment of the population, Seventh Day Adventists have significantly less cardiovascular disease than the general population because a good deal of their protein and caloric intake comes from nuts.

What kind of nuts should you eat? My top three choices are almonds, walnuts, and macadamias. Almonds are a good source of gamma tocopherol, a form of vitamin E that neutralizes

artery-damaging peroxy-nitrite (a free radical). Walnuts and macadamias are high in healthy unsaturated fats.

There are many ways to include nuts in your diet. Eat them as snacks or combine them with cereals or dried fruits for a nutritious meal. Add them to salads for more protein and a feeling of fullness. My favorite way of eating nuts is to include them in a blended morning power drink with fruits, protein powder, and other energy-boosting ingredients. You should eat nuts raw, or roast them to bring out the full flavor. Be sure to stay away from processed nuts, which are fried in oil or showered with salt.

Green Tea

Years ago, I reviewed research findings that green tea protects against heart disease, and I've been a staunch green tea drinker ever since. Animal and human studies suggest that the antioxidants in green tea reduce your risk of dying from cardiovascular disease by helping to prevent plaque rupture and by controlling blood pressure. In a 25-year study, tea drinkers consuming more than 8.5 ounces a day had a much lower risk of dying and a lower rate of first heart attacks than those who drank less tea. Similarly, a Japanese study conducted at the Nippon Medical School concluded that "the more green tea patients consume, the less likely they are to have coronary artery disease."

Green tea is rich in natural antioxidant compounds called flavonoids. One of them, epigallocatechin gallate, has been found to reduce multiple risks for cardiovascular disease in animal studies. Green tea is also a good source of the flavonoid quercetin—a compound that prevents plaque build-up in the arteries (for more on quercetin, see box next page). And if that's not enough, a soothing cup of green tea is also a natural COX-2 inhibitor—the enzyme involved in inflammation.

I recommend green tea to all my heart patients, even those with advanced disease. However, drink only the organic variety. Non-organic blends may contain pesticides and

lead—ingredients you certainly don't want in your body. If you're sensitive to caffeine (even though regular tea has half the caffeine of coffee), buy the decaf variety. For an ongoing medicinal effect, drink at least three cups a day.

Onions

Like green tea and red wine, onions derive much of their heart-protective qualities from the flavonoid quercetin. One Dutch study showed that elderly men who regularly ate quercetin-rich foods such as apples, onions, and green tea had reduced risks of sudden cardiac death. The more quercetin in the diet, the lower the risk of sudden cardiac death became.

In addition, onions are packed with sulfur, another important flavonoid. I value the fibrinolytic qualities of onions, which means they promote the dissolving of blood clots. In addition, onions have been found to reduce blood pressure

Onions have a thermogenic effect that raises body temperature and boosts circulation. And, while there aren't any studies to support it, that thermogenic effect may be why some patients have told me that eating a lot of salads with raw onions have helped them lose weight.

For best medicinal results, you should eat onions raw. According to animal studies, cooked onions don't have the same medicinal punch. Raw onions are delicious with sardines, on sandwiches, and in salads, and you can easily add them to your favorite dishes.

Garlic

Garlic is a fabulous anti-inflammatory and anti-microbial agent with a long history in folk medicine. It's an excellent natural blood thinner—so effective, in fact, that I instruct some patients to lay off garlic if they are on a pharmaceutical blood thinner like Coumadin. Garlic has also been shown to lower blood pressure and slow the progression of arterial plaque.

Although evidence to date indicates that raw, cold-aged garlic offers the greatest medicinal value, studies have also demonstrated that cooked garlic is effective. The highest quality

The Truth Behind the French Paradox

Drinking red wine can also support a healthy heart by offering you some protection from the harmful effects of lipid peroxidation (oxidative stress from burning unhealthy fats). Lipid peroxidation is one of the first steps in the aging of your blood vessels.

This surprisingly protective effect from red wine gives rise to a phenomenon known as the "French Paradox." Although the French typically eat a diet rich in gravies, potatoes, and red meats, they generally have a higher level of cardiovascular health. Epidemiologists suggest that this paradox is attributable to the red wine the French ingest daily with their meals.

Researchers believe quercetin and other nutrients in red wine compensate for the high-fat diet and keep heart disease at bay among the French. Indeed, quercetin has been shown to reduce blood stickiness or clumping, improve circulation, and interrupt the oxidation of LDL cholesterol. It also prevents deposits of plaque from forming in the arteries.

Although red wine in moderation (about one 6-oz. glass every other day) is reasonable, the daily intake of red wine can injure liver cells, and result in liver dysfunction. Keep in mind that although the French have better heart health, they also have the highest incidence of cirrhosis in the world.

is grown organically. There's an old saying among Italian chefs that there's never enough garlic in a dish. I'm no different. I chop up at least one clove when I make spaghetti sauce. Include garlic in your salads and sauces.

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CHAPTER 12: EXERCISE AND PHYSICAL ACTIVITY

In addition to adopting a heart-healthy diet, another basic of good health that I have to remind patients about is exercise. Exercise is important at any age, but it is even more so in your senior years.

To help me make this point, I contacted Tedd Mitchell, M.D., who is president and medical director at the Cooper Clinic in Dallas, Texas, the well-known fitness and preventive medicine center. He is also a co-author of *Move Yourself* (John Wiley & Sons, 2008), a new book that makes one of the most powerful cases for the importance of physical movement that I've ever read. It's a must-read that will be particularly compelling for those who tend to avoid exercise. The book provides terrific insights as to why inactivity is such a prominent risk factor for many health problems and how even minimal amounts of regular activity can have immediate benefits. It also offers an inviting exercise program to jump-start the slacker in all of us.

For seniors, the benefits of physical fitness go far beyond cardiovascular health. "Physical activity prevents, minimizes, and reverses the strength, flexibility, and functional slowdown that comes with aging," says Dr. Mitchell. "It can preserve independent living longer into old age."

What Type of Exercise Is Best

My patients often ask me what the best exercise is. I answer that the best exercise is the one you will do. There's no point recommending an exercise if the person you're recommending it to won't do it. I also tell patients to think of it as "movement" rather than "exercise." That doesn't sound like so much work, and, after all, the whole goal of exercise is to get out and get moving. Walk, dance, skate, ski, swim, bike, play tennis—it's up to you. But choose an exercise and do it regularly.

You can't be truly healthy without exercise. Exercise strengthens the heart, improves blood

flow and blood vessel integrity, and reduces inflammatory chemicals associated with arterial disease. In recent years, several studies have shown that it's not necessary to engage in strenuous forms of exercise like high-impact aerobics or running. This research has proved that the old saying "no pain, no gain" is untrue.

A study of more than 39,000 healthy female professionals ages 45 and older showed that light-to-moderate activity, such as an hour of walking per week, lowered cardiovascular risk—even in women who were overweight, smoked, or had high cholesterol levels. Studies have shown that men obtain similar benefits from walking. The reduction in cardiovascular risk from exercise includes lowering your risk of stroke. In another study, 4,065 nurses ages 40 to 65, without cardiovascular disease or cancer, completed detailed physical activity questionnaires. The surveys revealed that walking was associated with reduced risk of stroke.

The Link Between Strenuous Activity and Heart Attack

Not only is regular, moderate exercise sufficient to reduce your cardiovascular risk, high-intensity exercise may be hazardous to your health. If you are sedentary and get little or no regular exercise, and you suddenly engage in intensive exertion, you are especially vulnerable to a heart attack. You may even know someone who has suffered a heart attack during or after strenuous physical activity such as jogging, shoveling snow, pushing a car, lifting something heavy, or even sexual activity.

We have always known of the correlation between heavy exertion and heart attacks, but two studies published in the *New England Journal of Medicine* have clarified that relationship. These studies found that although heavy physical exertion can trigger heart attack, people who exercise regularly have a reduced long-term risk of coronary events after heavy exertion.

In these studies, more than 1,000 patients were interviewed soon after they were hospitalized for heart attack to determine what their activities were during the hour before the onset of their symptoms. The studies found that although heavy physical exertion was strongly associated with an increased risk of heart attack, people who did no regular exercise had a much higher relative risk of heart attack after unexpected bouts of heavy exercise. The patients who exercised five times or more per week over a long period of time had substantially lower relative rates of heart attacks triggered by strenuous exertion.

So even if you do exercise regularly, I must emphasize that your heart may still be vulnerable during strenuous activity. To protect yourself, learn to “listen to your body” and be aware

Getting Started After a Long Layoff

If you haven't exercised in a long time and you have cardiovascular disease, talk to your doctor about what kind of limits you may need to abide by. Your doctor may want to carry out a treadmill exam and give you a specific exercise prescription. You don't want to take on more than your body can handle.

Start slow and pace yourself. If you have angina or congestive heart failure, especially, be sure to get out and walk, but listen to your body. Stop if you feel ill or develop shortness of breath, chest discomfort, or leg cramps. Symptomatic patients will need to scale down their efforts from the levels they pursued in healthier times.

Warning signs that you may be doing too much exercise include:

- Light-headedness or dizziness
- Palpitations
- Shortness of breath (unable to carry on a conversation)
- Jaw pain
- Tingling or numbness in the arms
- Tight feeling in the lungs

If symptoms persist after 3–5 minutes of rest, seek medical attention immediately. Symptoms may occur up to an hour after exercising, so be mindful of how you feel as you cool down and resume your regular activities.

of any symptoms that come up during exercise or up to an hour afterward (see box below).

It's Easy to Start Walking

Walking is a wonderful exercise for all ages—I've rarely heard of people injuring their muscles, ligaments, or joints while walking. Most everyone can walk, and it offers little risk from overexertion.

When the weather permits, try to get outdoors and walk. Not only do studies show that you'll engage in activity longer when outdoors and that you'll work more muscles, but you will also enjoy a multisensory experience. Take in the surroundings—the sights, sounds, smells, and sensations. Don't worry about pace. Some exercise enthusiasts believe we must walk briskly to burn calories, but this is not the case. In fact, a mile of walking—at any speed—burns as many calories as a mile of running.

Other Ways to “Exercise”

Movement of any kind has enormous physical, metabolic, and psychological benefits. If you can't take a walk every day, you can try one of these:

- Ride a stationary bike.
- Do stretching exercises that will help maintain muscle tone and flexibility, such as yoga.
- Lift books over your head.
- Take up painting with a brush.

I also recommend dancing. Many of my patients think I'm joking when I tell them to dance for exercise. Maybe that's because most people think dancing is done only on special occasions. This is not so. You don't have to go to a nightclub or attend a wedding to dance. Put on your favorite music at home and dance with your spouse, a friend, or even yourself.

Finally, any type of activity involving arm movement is especially important for heart health. Most people who have heart attacks experience pain in the left shoulder or left arm. That's because the tissue is connected. In this context, it's interesting to consider that when you reach out to someone with your arms,

Sexual Activity and Heart Disease

Over the years I've had patients ask me whether it's safe for them to engage in sexual activity. After interpreting the existing research to determine whether sexual activity is beneficial or increases the risk of a cardiac event, the consensus is that sex *does* raise your risk of having a heart attack. However, the risk increase is very small. *Regular* sexual activity was found to be no more dangerous than *regular* exercise.

Still, there is an increased risk among those with cardiovascular disease. Folks with good reason for concern about the safety of being sexually active are those with a sedentary lifestyle, unstable angina (chest discomfort at rest and/or with minimal exertion), or congestive heart failure. For these people, the risk of sudden, heavy exertion precipitating a heart attack is almost 1 in 1,000.

When I have concerns about the safety of sexual activity in my patients, I have them wait until I do a few tests first. Before giving the green light to anyone with the above cardiac problems, as well as those with advanced coronary artery disease or arrhythmias, I do a stress test to look at how their heart performs with an increase in physical activity. Then, if I am satisfied, I have them wear a Holter monitor to record their heart rate for 24 hours, and ask that they engage in sexual relations while we can keep a record of the heart's activity. I always recommend that folks choose a time when they are rested and not under psychological stress to head for the bedroom, as well as using physical positions that are comfortable.

If you have any of the heart conditions that I mentioned, and especially if you are symptomatic during sexual activity, then ask your doctor to do these screening tests

for you. If you are avoiding sexual relations out of fear that your heart may be compromised, taking these tests is a good way to accurately assess the risk. Sometimes, after a heart attack, a person can become understandably frightened by an acceleration in their heart rate, and avoid any activity that might cause it to do so, even though it may be a safe one for them.

Tips for Heartsafe Passion

If your doctor's given you the green light to resume your love life, here are some tips to do that safely:

- Avoid placing any strain upon the chest muscles, particularly if you've just had surgery.
- Try a side-lying position to put less strain on the heart and chest.
- For male patients, try lying on your back with your partner on top.
- If you're a postoperative woman, and your chest is still sensitive, a more upright position, using the side of the bed or a chair, may be favorable.
- Avoid sexual activity one to two hours after meals (digestion shunts blood to the gut, making less available to the heart).
- Do not consume excessive amounts of alcohol.
- Don't pressure yourself or your partner to perform; the mental anxiety may put more of a strain on the heart than the physical activity.
- Listen to your body; if what you're doing feels alright, chances are, you'll be alright.
- Be creative, be imaginative, be yourself; remember physical love is an expression of emotional love, and expressing your feelings helps heal the heart.

or hug them, you are actually reaching out with your heart. You are going heart to heart, through your arms.

Whenever you use your arms, you are working with the energy of the heart. Yoga, tai chi, qigong, and pumping your arms while walking are good examples of activities that stimulate the heart through the arms. You can also stand in front of your stereo and "conduct" the orchestra to your favorite musical scores. If you have heart disease, be more active with your arms as an adjunct way of healing the heart.

Remember to Warm Up, Cool Down

Most injuries that occur while exercising are caused by not warming up and/or stretching before beginning. Intense exercise without warming up dumps more fatty acids into your bloodstream than muscles need. These excess fatty acids can end up lining blood vessel walls. Also, sudden intense exertion can shock your heart, greatly increasing the risk of heart attack.

Warming up raises your heart rate gradually and facilitates the breakdown of glucose and

fatty acids. Stretching gradually loosens muscles, tendons, and other tissues so they are more flexible and absorb shock or injury better. Many exercises, especially weight lifting and running, decrease range of motion unless you stretch.

Never stretch cold muscles, for you risk tearing them. First, warm up by walking in place or riding a stationary bicycle for five minutes. When you stretch, do not hold your breath. Stretch slowly and hold the position just short of pain. Avoid bouncing.

Cooling down. If you're walking for exercise, the final 5 to 10 minutes of your walk should be done at an easy pace. When finished, repeat the stretches you did after your warm-up. Cooling-down stretches gradually decrease the intensity of exercising, improve flexibility, and help your body return to its resting state. It discourages blood from pooling, removes metabolic waste products from the bloodstream, reduces soreness, and lowers risk of cardiovascular complications.

One Last Reminder

Finally, remember that your metabolic rate rises when you exercise—and faster metabolism means elevated levels of free radicals in your blood. Over time, excessive free radicals can speed up the oxidation of LDL cholesterol, which in turn can stick to the inside of your arteries, causing plaque buildup and arterial blockage.

This free radical assault can be made much worse by common exercise conditions. For example, if you jog on a hot, sunny day when the air pollution level is high, inhaling these airborne toxins creates a huge surge of free radicals. These extra free radicals are carried along by your high metabolic rate and combine with the free radicals produced by the exercise itself to become an unrelenting tidal wave of free radicals that attack your body.

I know what some of you may be thinking, but please don't interpret this as meaning that exercise can be bad for you. The risks of not exercising, or exercising too little, are far greater than the risks of free-radical damage. But I want you

to get both the heart-healing benefits of regular, moderate exercise and protection from free radicals.

If you're exercising regularly, you can protect yourself from free radical damage with antioxidants. Extensive research indicates that antioxidant supplements neutralize free radicals before they do damage, by preventing the oxidation of fats and stabilizing cell membranes broken down by exercise. Key antioxidants that you should take include CoQ10, L-carnitine, lutein, grape seed extract, and mixed carotenoids.

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CHAPTER 13: STRESS REDUCTION AND MIND-BODY BALANCE



In now want to turn to what an important, but often overlooked, aspect of addressing cardiovascular disease: the mind-body connection. Your emotions and reactions to stress play a huge role in causing cardiovascular disease, as well as healing from it.

How you handle stress can be a matter of life and death. When you get fired up emotionally, anything can happen. Those feelings can light a fuse inside your body that causes an immediate and deadly explosion, such as a heart attack or stroke, or trigger a cascade of harmful chemical changes that become deadly over time. I've seen anger, chronic stress, depression, and social isolation take a big toll on patients. These risk factors are hidden, and doctors don't usually address them.

This risk was driven home for me when I was 13 years old and my paternal grandmother died from a massive stroke. I remember asking my father what had caused her stroke. He explained that the oil burner in my grandmother's house had started smoking and she became emotionally upset about it. Within a few minutes she became confused. Then she collapsed to the floor.

The same thing can happen to us if we don't deal with stressors effectively. But if you can recognize your emotional issues and deal with them, you'll become less prone to angina, irregular heartbeat, heart attack, and stroke.

Heartbreak and Cardiovascular Disease

The powerful relationship between the mind and the body is huge factor in sudden cardiac death. Years ago, Paul "Bear" Bryant, the winningest coach in college football history, died of a massive heart attack shortly after his retirement. I believe Coach Bryant joined the thousands of individuals who, after they lost the motivating

force in their lives, such as a spouse or career, also lost their will to live. Bear Bryant's life purpose was coaching. When this connection was broken, he experienced heartbreak

I define heartbreak as the lack or loss of love and intimacy in life. Many cases on record attest to heartbreak being directly responsible for heart disease. Heartbreak from the loss of vital connections can lead to the literal breakdown of the functions of the heart.

It may feel strange to discuss heart disease in the context of your emotions. Your feelings are probably not something you ever thought about in connection with your risk of heart disease. I'm not surprised that you haven't heard much about heartbreak's role in heart disease. Heartbreak is not considered a medical "condition" because love is not a recognized physical function. But love is a tremendously vital force in human behavior, and I firmly believe that we must try to understand its nature and the role it plays in our emotional and physical health.

I want to make it clear that love and intimacy cannot "cure" heart disease. But if you learn to cope with heartbreak, anger, or resentment, rather than suppressing the feelings, you'll be doing your heart a world of good. You will harness the power of your emotions to heal your body.

The Impact of Anger

After I became a cardiologist, I studied psychotherapy because of my interest in the mind/body connection. I always ask my heart patients about their emotions prior to an angina episode or heart attack. Many have said they had an outburst of anger prior to the event.

It didn't take long for me to realize that anger is the Achilles' heel of the cardiovascular system—a trigger for serious problems, including a heart attack. Your blood vessels

constrict and your blood pressure rises. The electrical currents to your heart become unstable. And if you have arterial plaque, anger is like throwing a match into a can of gasoline. The plaque can rupture, and the resulting clots can kill you.

In the 1990s, Murray Mittleman, M.D., of the Institute for Prevention of Cardiovascular Disease Research Center at Deaconess Hospital, a teaching hospital affiliated with Harvard, was curious about the heart/emotion connection, and conducted a series of studies on anger and its effect on the heart. His research identified anger as a common trigger of heart attack and life-threatening arrhythmias. He maintained, "The scope of the

Cool Down When Anger Gets You Heated Up

When you feel your pulse begin to rise, you can short-circuit the stress response by concentrating on a past moment of intense joy. Like all of the other muscles in your body, your heart has a memory, and it's particularly adept at retaining emotional ones. So, when faced with a stressful moment, visualize a time when you felt out-of-this-world happy. It doesn't matter what the occasion was. It could be the birth of a child, an engagement or marriage, an "A" on your report card, or being recognized for an accomplishment. The key is to choose an event that brings up positive feelings. Then put yourself back in that moment—feel it, smell it, taste it, and live it all over again.

The upshot of reliving positive emotions is that you effectively cancel out the negative ones caused by the stressful situation. This effect is due to the unique way in which the heart and brain interact with each other. Whereas it's often thought that the brain tells the heart what to do, the heart's function is also influenced by its own memory and its own simplified nervous system. Normally, the heart and brain send signals to each other that affect how both of them function. But when faced with stress, the heart's signals tend to override the brain's signals. That's one of the reasons why, in stressful situations, your heart keeps racing even though your brain is shouting, "Be calm!"

The key to defusing stress is to redirect your heart's focus away from the negative emotion and toward a fantastically positive memory. So choose your memory and keep it at hand. You never know when you may need to call on it!

problem is sizeable—at least 36,000 (2.4 percent of 1.5 million) heart attacks are precipitated annually in the US by anger."

To demonstrate the potential impact of anger, consider this story. One of my patients—an attorney—had his new car scratched with a key from one end to the other by a teenage punk. When he first saw the damage, the man got so angry that he had a heart attack on the spot. He was still livid when I saw him later in the emergency room. I had to calm him down and remind him that his car wasn't worth the price of his life.

Most of the patients I work with don't see themselves as having an anger problem—they deny it. The truth is we are all festering with anger and it can often only express itself in the body through physical symptoms. But folks who recognize and deal with their anger have a reduced physiological response to provocative stimuli, making them less prone to anger-induced cardiovascular conditions.

One of the best ways to cope with anger is to release it. Find a place of solitude and scream, yell, or cry. Talk to a friend. Or try twisting towels, hitting tennis balls, or punching pillows.

Also ask yourself why you feel angry. Poorly focused or internalized anger is actually an expression of powerlessness. Recognize that you cannot be effective when you are possessed by anger. If you understand why you're coming to such an emotional point, you'll be better able to identify and avoid those triggers.

Stress Reduction Techniques

There are a lot of things you can do to manage stress and separate yourself from negative thoughts and feelings. I recommend that you devote time every day to this goal. Here are some of the techniques that I've found most productive:

Mental Imaging

Imagine you are experiencing something, and allow your body to react as if the event you're imagining is actually happening. For instance,

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imagine biting into a bright yellow, aromatic, sour lemon. If your lips and facial muscles tensed up, or your mouth watered, you just used mental imagery to elicit communication between your mind and body.

You can learn to use this mind-body dialog to heal your body—the relationship between mental imagery, relaxation, physiological responses, and behavior has been documented in many scientific studies. A technique called relaxation with guided imaging (RGI), for example, has been shown to lower symptoms of rapid heartbeat, breathing difficulties, and jaw clenching. In other studies, cancer patients who were taught various mental imaging techniques used them to successfully increase the effectiveness of treatment.

Belleruth Naparstek, a well-known guided imagery teacher, has a wonderful Web site, Health Journeys (www.healthjourneys.com), that's devoted to guided imagery resources and research.

Music

The melody, pitch, timing, and beat of certain music—particularly classical and baroque (including “Pachelbel’s Canon” and “Chant” by the Benedictine Monks of Santo Domingo de Silos)—can quiet your mind. The connection is simple: Most scores of classical music range between 60 and 140 beats per minute. The resting heart beats approximately 50 to 80 times per minute—so it would appear that soothing scores in this range induce calm. For relaxation, try listening to the following pieces of music:

- Bach: *Brandenburg Concerto No. 4*, second movement
- Bach: *Orchestral Suite No. 2*, Sarabande
- Holst: *The Planets Suite*, “Venus”
- Ravel: *Mother Goose Suite*, first movement

The healing power of music also comes from its ability to stimulate the right side of the brain, which thinks in images. This is the creative, intuitive part of the brain, and it is responsible for dreams and expressive art forms like music and painting. I believe the right brain needs to be exercised if healing is to truly take place.

Reiki

This ancient energy therapy (pronounced “ray-key”) is based on the belief that universal life energy is present in all beings, and that the energy field unique to each individual permeates the body and extends outward by several inches, in what is called an “aura.” In a Reiki session, a trained practitioner places his or her hands near the body to engage this energy field. Clients remain fully clothed, in a reclining or seated position. The practitioner carefully moves his or her hands over different parts of the client’s body to concentrate the flow of energy in various areas. This movement of energy can promote general well-being, address specific emotional states, or help treat health conditions.

Patients who try Reiki sessions sometimes feel warmth from the practitioner’s hands, tingling, a sense of relaxation, or an altered state of consciousness. Because Reiki helps open energy blocks, it can be a comforting experience, without the invasiveness of body manipulation, as in chiropractic or massage. To find a Reiki or other energy practitioner in your area, check at a local health food store for listings or a referral resource such as the *Alternative Medicine Yellow Pages*.

Massage

This form of bodywork helps people decrease their heart rate and blood pressure and reduce the stress that can lead to cardiovascular disease. Research confirms the many benefits of massage, including simple stress relief, release of endorphins (which offset pain), and enhanced immune function.

Meditation

Simple meditation can offset the chronic release of cortisol. You can do a simple meditation by focusing on a phrase that is meaningful to you, such as “The Lord is my shepherd,” or “Hail Mary, full of grace.” Just close your eyes and say your phrase silently as you exhale. When stray thoughts come into your mind, don’t try to force them out. Gently, and without straining, bring your focus back to your phrase. Use this technique for 10–15 minutes, once or twice daily, or as needed.

You can also try Transcendental Meditation (TM). A friend of mine started practicing TM 30 years ago after developing work-related high blood pressure. Within a month, his pressure had normalized. Thirty years later, he still meditates regularly and his blood pressure is a youthful 120/60. Dozens of published studies have shown that TM has a powerful effect on the heart and overall health. TM has also been found to significantly improve heart rate variability as well.

Prayer

Spiritual practices lower stress—no doubt about it. In a conference at Harvard Medical School several years ago, research was cited showing that people who attend church frequently, or pray regularly, have lower rates of heart disease, hypertension, and suicide. Those who prayed even lived longer than those who did not.

When you include prayer in your daily life, you will notice some changes. You may become more open to life, less rigid, and more centered. You may find it easier to resolve your problems and cope with stressful situations. Your relationships with others will deepen. All of this will be reflected in your healing heart, and you will indeed feel closer to a higher power.

Exercise

In addition to the physical benefits that I described in Chapter 12, exercise provides enormous mental/emotional benefits and can improve your state of mind. It doesn't take much to get results—some regular walking can beat back depression and anxiety. If you're prone to stress, get moving!

Get Proper Rest

The age-old doctor's recommendation goes straight to the heart of the issue. When you become fatigued, it's easy to become stressed. Rest includes not only your daily sleep but adequate relaxation and vacations. I remember years ago reading a study done by AT&T that showed people who took more vacations lived longer.

Learn to Say "No"

Always accommodating others is a wonderful trait; however, we can easily become overwhelmed and fatigued in the process. Say "no" when confronted by a request you think will probably be too stressful or time-consuming. You can't always please everybody. Moreover, no one will respect you unless you respect yourself and your personal time.

Pets

Research confirms what you've probably known all along: Animals—especially those with which you've had a long-term relationship—can be good for your health! The survival rate of people who suffer a heart attack has been found to be five times greater among those who leave the hospital and go home to a loving pet than those who go home to an empty house or a judgmental spouse!

There's no doubt about it, our animal friends can literally open our hearts. Here are some of the lessons we can learn from them:

- **Appreciation.** Pets not only bring tranquil and playful energy to a space, they can teach us to be more relaxed and in tune with our bodies. Just look at how animals start their day. Do birds ever wake up grumpy? No, they chirp to the light of a new dawn!
- **Relaxation.** Have you ever watched your cat arch his back? Some yoga postures mimic this stretch. Stretching, which involves deep breathing, is a great form of relaxation. It's also a wonderful way to start your day instead of jumping out of bed and plowing ahead.
- **Presence in the moment.** Animals know how to just "be." They can hold a space as sacred, whether it's their favorite sunning spot, or the mat by the front door. Observe your pets at these times. Watch as they tune out the world and practice the "art" of silence.
- **Discrimination.** Animals are a lot smarter than people when it comes to stress. They know when to walk away from a potentially hopeless situation that threatens their well-being! For example, when things are looking bleak, cats just turn around, shake it off, and

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walk away to a secluded spot. They have an innate ability to tune out the environment and to become aloof in intolerable situations. On a similar note, they're not afraid to say "no," walking away when they can't handle any more stimulation. This is a wonderful lesson that we can learn from.

If you're recovering from a health crisis or burned out from putting your own needs last, use these lessons from the animal kingdom to reconnect with your intuition. If you can't live with an animal because of allergies, travel, or some other reason, then you can always "borrow" one to spend time with, or watch a movie about an animal character. Some of my favorites are *Iron Will*, *Dreamer*, *White Fang*, and *The Horse Whisperer*.

Laughter

Children laugh an average of 400 times a day. Adults, only 15. Somewhere on the way to adulthood we lose the ability to laugh 385 times a day! Up your laughter quotient with comedy videos or playing with your grandkids. In one study that lasted more than a year, cardiac patients who watched a comedy show on a daily basis had significantly lower stress hormone levels and blood pressure readings, and they needed less medication.

Play

This one may seem odd—but one of the most dismaying things I've discovered over years of medical practice is that adults no longer know how to play. When I ask my patients how they play, they often look at me with a blank expression. Or they say that they play golf or tennis.

But sports activities are not really play. Although I've seldom heard of anyone dying while playing with their children, grandchildren, or dog, many of my patients have had heart attacks while engaged in golf, tennis, or racquetball (the sport most infamous for sudden death). Sports can be enjoyable, but they're not truly healing because they involve performance, competition, and the need to win. True play is spontaneous, has no set agenda or rules, nor even a desired outcome.

When we play, we become totally free. Absorbed in the moment, we are taken out of our heads and into our bodies.

Get back in touch with the playful part of yourself by observing children and seeing what they do. Even better, play with a child and let him or her set the tone. Try swinging on a swing, blowing bubbles, finger painting, or playing catch.

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CONCLUSION

Now that you've read this report, it should be clear to you that a diagnosis of any cardiovascular condition is not a death sentence, nor does it have to seriously compromise the quality of your life. Using targeted alternative therapies, you can regain your health no matter what type of cardiovascular problem you have. The therapies and lifestyle recommendations I've given you in this report give you the best odds for overcoming your condition and living a full, active life without restriction on your activities. Time and time again I've seen alternative therapies work for patients—especially those who have been failed by conventional treatments alone. And these therapies can work for you, too.

You may not be able to completely avoid traditional medical treatments—as you've seen in this report, interventions such as prescription medication and surgery are necessary in some cases. But you may be able to cut back on the number and/or dosage of medications that you're taking or improve the outcome of your surgery by using alternative and complementary therapies. Most importantly, you'll get your life back—without the fear and uncertainty that having heart disease can cause. Like the many, many patients I've seen over 35 years, your diagnosis will no longer stand in the way of you living a full and vibrant life.

To your good health,

Stephen Sinatra M.D.

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Congratulations on making the commitment to take charge of your health and lead a longer, happier life. The advice I've given you in this report is just the beginning. I became a doctor and started my monthly newsletter, *Heart, Health & Nutrition*, to help people like you achieve the good health you deserve. In every issue of *Heart, Health & Nutrition*, I tell you about new and proven therapies that will help you look and feel better—and just may save your life!

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