

Tips for Preventing
Heart Attacks
& Reversing
Cardiovascular
Disease



Take Heart

COMPLIMENTS OF



HeartSmart IMT^{plus}



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DISCLAIMER

The information presented in this book is in no way intended as medical advice. You should always consult with your physician regarding your specific cardiovascular health and any actions you may take that can affect your health.

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There's an old joke that goes, "I saw my doctor the other day. He said the only thing on my body that wasn't soft were my arteries." Unfortunately, this is often close to the truth!

Jim was 41 years old and well on his way to a heart attack. He had beginning stages of heart disease and didn't know it. More importantly, he was deceiving himself about his risk because he believed he was making all of the right lifestyle choices with diet and exercise. He was wrong!

Many people believe that heart disease is an inevitable part of aging, which is true to a certain extent. We all develop the buildup of fatty deposits and cellular waste in our cardiovascular systems as we age. When this buildup becomes excessive, it can lead to a heart attack or stroke.

What many people don't know is that heart disease is not only preventable—it is reversible.

Although there are many books on preventing heart disease, few people are motivated or have the time to read them. This guide provides the essential information needed to reduce your risk for a heart attack or stroke and improve your cardiovascular health. It gives you a quick reference for: 1) understanding the basics of heart disease; 2) assessing the state of your cardiovascular health; and 3) taking simple, basic steps to protect yourself from a heart attack or stroke.

The two questions we all want answered are:

1. Do I have cardiovascular disease that puts me at risk for a heart attack or stroke?
2. If so, what do I can about it?

A Nation at Risk

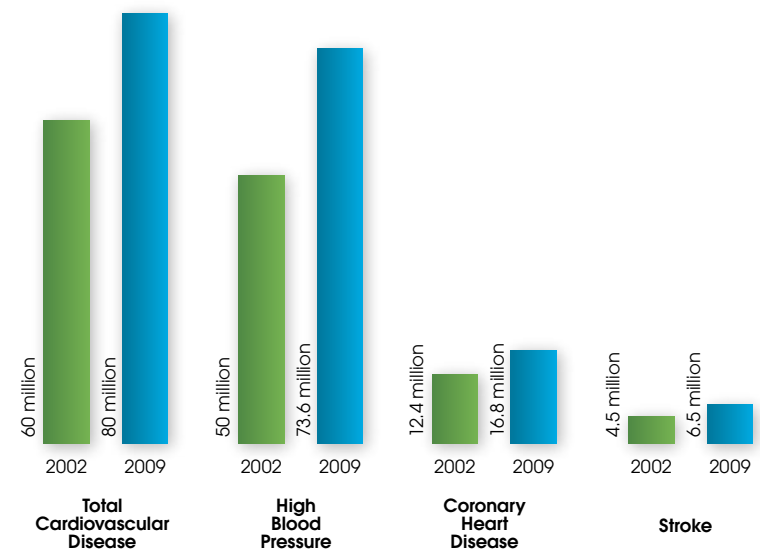
A Nation at Risk

Undetected cardiovascular disease is the greatest health risk facing Americans today. It is estimated that 80 million Americans have heart disease.

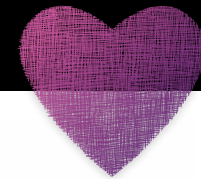
That number is rising with the aging baby-boomer population and dramatic increases in obesity, diabetes, and metabolic syndrome. Heart disease remains the number one health problem in the world today, accounting for more deaths than the next five causes combined—including all cancers.

What we call heart disease is often found in the 60,000 miles of our body's arteries and blood vessels that supply nutrients to the body as much as in the heart itself. The rapid rise in cardiovascular disease is shown in the chart below. If you want more evidence of the prevalence of heart disease, the American Heart Association (AHA) also reported the following:

- In 2005, heart disease accounted for 35.5% of all deaths, with an average of one death every 37 seconds.
- Someone in the United States has a stroke every 40 seconds on average.



Source: American Heart Association 2002 and 2009 Heart and Stroke Statistical Updates.



Women are at risk, too

The AHA Survey also provided the following information:

- For every woman who dies from breast cancer, eight will die from a heart attack. Although the number of deaths from breast cancer are stabilizing and even dropping due to early detection and treatment, heart disease and the resulting deaths are increasing for women.
- After age 45, the percentage of women with high blood pressure equals that of men. After age 64, a higher percentage of women than men have high blood pressure.
- Each year, approximately 55,000 more women than men have a stroke.

The first sign of heart disease can be fatal

For many people, the first “symptom” of heart disease is death. We tend to underestimate the real risk, because we all know people who have had heart attacks or severe heart disease resulting in bypass or other surgery and appear to be surviving just fine. Although modern medicine has increased the odds of surviving a cardiac event, the fact is that one out every four first-time heart attacks is fatal.

You can reverse heart disease

People are often surprised when they are told you can actually reverse as well as prevent heart disease through diet, exercise, and lifestyle choices. This guide gives you the basics about making the healthy choices needed to prevent heart disease; it is by no means comprehensive. More detailed information can be found through the contributing physicians, organizations, and other resources listed in the back of this guide.

Understanding Heart Disease

What is heart disease? For most of us, what we know about heart disease was learned from popular literature and watching our favorite medical shows on television (*ER*, *House*, *Grey’s Anatomy*, etc.). We know that high cholesterol is bad, although even physicians differ on this issue, and many of us get confused between HDL and LDL (*which is the good one again?*).

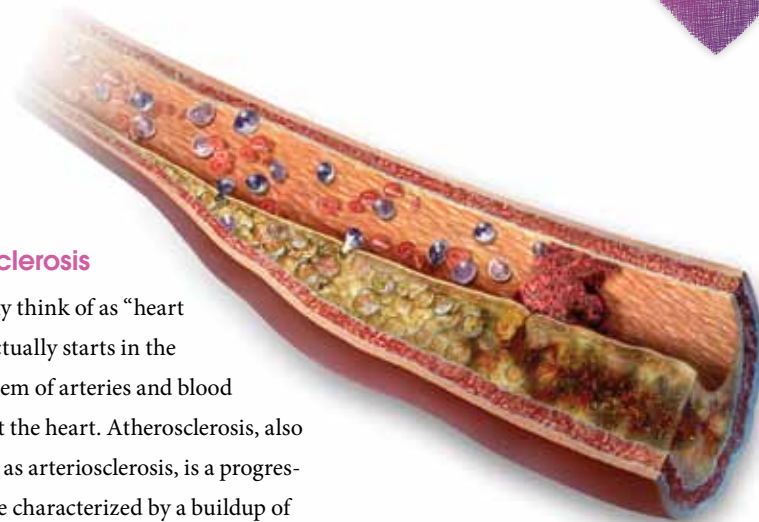
We’ve heard many of the terms, but have little understanding of what they mean and the risk that they pose for a heart attack or stroke.

Atherosclerosis

What many think of as “heart disease” actually starts in the body’s system of arteries and blood vessels, not the heart. Atherosclerosis, also referred to as arteriosclerosis, is a progressive disease characterized by a buildup of plaque within the arteries leading to what is called hardening of the arteries.

Plaque is formed from fatty substances, cholesterol, cellular waste, calcium, and fibrin, which build up in the vascular wall. This process is exacerbated by inflammation in the body caused by, among other things, high triglyceride and blood sugar levels.

As individuals grow older, it is normal to develop some thickening of the arteries. However, if the atherosclerosis is advanced, heart disease is likely. Plaque will eventually intrude into the artery and may partially or totally block blood’s flow through an artery.



Cardiologists now recognize that plaque composition and stability are more important than size. The danger is with the intermediate stage “soft” plaques that are unstable and vulnerable to rupture, which can cause a heart attack or stroke even though they are not sufficiently large to block blood flow.

Know Your Risk

Know Your Risk

JAMES EHRLICH, MD

It is vital to know the state of your cardiovascular health and your particular risk factors. With this knowledge, you and your physician can take steps to reduce your risk, stabilize plaque, and even reverse existing levels of disease.

The first step is to know the major risk factors for heart disease as well as the actual symptoms of coronary heart disease. The major risk factors and symptoms are:

Major Risk Factors

- ✦ High blood pressure
- ✦ High cholesterol
- ✦ Diabetes
- ✦ Obesity
- ✦ Smoking
- ✦ Family history of heart disease

Symptoms of Heart Disease

- ✦ Chest pain
- ✦ Shortness of breath
- ✦ Nausea or dizziness
- ✦ Sweating or paleness
- ✦ Stomach or abdominal pain
- ✦ Weakness or fatigue

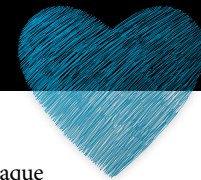
Risk factors don't tell the whole story

While it is important to be aware of these risk factors, studies have proven that in the weeks prior to their devastating heart attack, most people would pass a stress test, have an unremarkable cholesterol level, and would be considered at low or moderate risk by a physician. In fact, based on an office assessment, more than 75% of women who get heart disease would not even be considered candidates for protective medications by their own physician.

Know your blood pressure: the unseen risk

One of the most obvious and ignored risk factors is high blood pressure. Many people have high blood pressure for years without knowing it. Uncontrolled high blood pressure can lead to a heart attack or stroke as well as kidney failure and other health problems.

Hypertension is the term used to describe high blood pressure. Blood pressure readings are measured in millimeters of mercury (mmHg) and usually given as

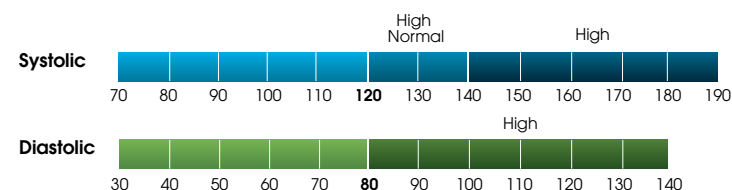


two numbers. For example, 120 over 80 (written as 120/80 mmHg).

- The top number is your systolic pressure and is considered high if it is consistently over 140.
- The bottom number is your diastolic pressure and is considered high if it is consistently over 90.

quantify atherosclerosis (plaque buildup) and individualize risk assessment.

In addition, there are new blood tests that can more accurately look at cholesterol particles to understand the nature of your risk, help explain atherosclerosis in vessels, and allow your doctor to make



Prehypertension is when your systolic blood pressure is between 120 and 139 or your diastolic blood pressure is between 80 and 89 on multiple readings. If you have prehypertension, you are more likely to develop high blood pressure leading to heart disease. You can readily purchase a home testing unit to monitor your blood pressure if you may be at risk.

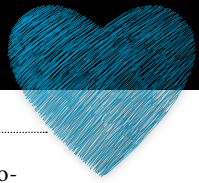
Preventive testing: individual risk assessment

Many tests for heart disease are performed after the patient has shown symptoms such as chest pain or an actual heart attack. By then, it may be too late. There are now excellent cardiovascular imaging tests that look directly at blood vessels to detect and

personalized decisions on treatment and lifestyle modifications.

We can now measure the levels of inflammation in vessels, which can help determine if your plaque is “hot” or vulnerable to rupture, a strong risk factor for heart attack and stroke.

Despite much talk about preventive medicine and the benefits of catching disease at an early stage to reduce costs, the reality is that the current healthcare system is mostly reactive—focused on treatment, not prevention. Often, people must ask and pay out of pocket for some of the best screening tests such as carotid intima-media thickness (CIMT) and coronary artery calcium scoring (CACS) to protect their cardiovascular health. But it’s much more



cost effective to be proactive by spending a few dollars on comprehensive preventive testing. The huge costs of having a heart attack or stroke (including indirect costs such as disability and loss of income, as well as direct hospital costs) can overwhelm most families.

Understanding cholesterol and inflammation

It is important to know not only your cholesterol values, but also the various subtypes of cholesterol, many of which are never measured by the traditional tests most Americans receive. Advanced or expanded lipoprotein tests reveal the different types of LDL (bad) and HDL (good) cholesterol, the size and density of the particles, as well as hidden risk factors. Small, dense LDL cholesterol particles easily pass into the vessel wall, become oxidized, and form dangerous plaque. In addition, some people carry high levels of inherited lipoproteins like Lp(a) that can only be detected with sophisticated cholesterol tests.

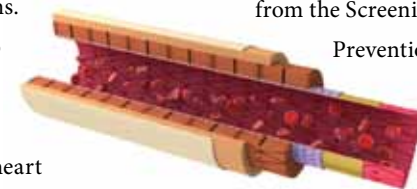
These tests are generally covered by insurance and can more accurately and comprehensively measure the various types of cholesterol that lead to heart disease. With such advanced testing, your doctor can look beyond LDL and HDL to view the total number of bad particles and the total mass of protective particles. In addition, the test reports the size and density of LDL and gives your physician an idea of whether you have insulin resistance that may lead to diabetes, metabolic syndrome, or heart disease. Novel risk factors like dangerous Lp(a) can be detected and levels of triglyceride-rich remnant lipoproteins can be considered before making decisions on lifestyle and diet, nutritional supplementation (like fish oil), and possibly medications.

There are also other biomarkers (e.g., thyroid and insulin hormone levels) in addition to these detailed lipid and inflammation panels that your physician may use to assess risk and work with you to design a diet, lifestyle, supplementation, or therapy plan to lower your risks.

Cardiovascular imaging: seeing into your arteries

There is no substitute for looking at the actual state of your arteries with cardiovascular imaging. There are two major tests that look for plaque that are far more predictive of future heart disease and stroke than risk factors can be. These are 1) carotid intima-media thickness (CIMT) using ultrasound and 2) coronary artery calcium scoring (CACS) by ultrafast CT.

CIMT is a measurement of the thickness of innermost layers of the carotid artery wall by ultrasound imaging. This is where atherosclerosis begins. CIMT tests may also identify soft plaques that are vulnerable to rupture, causing heart attacks or stroke. Atherosclerosis can be reversed, and because there is no radiation, CIMT can be safely used in all age groups and as often as needed to monitor the progression or regression of disease.



CACS determines the coronary calcium score, proven to be the most powerful predictor of future heart attacks. It measures the actual buildup of calcified plaque in the arteries of the heart. During one deep breath, 35–45 pictures taken of the heart allow you and your physician to understand whether you are at low, medium, or high risk for a heart attack. A zero score is very common and provides reassurance that the chances for a heart attack in the foreseeable future are extremely low.

In 2006, leading preventive cardiologists from the Screening for Heart Attack Prevention and Education (SHAPE) Task Force recommended that CIMT and calcium scoring be utilized as

the preferred initial tests for determining risk in middle-aged adults. The degree of plaque burden measured by these techniques helps determine how aggressively one needs to address modifiable risk factors and is a window of opportunity to prevent heart disease and stroke from affecting you and your family.

Now What do I do?

Now What do I do?

Your risk for a heart attack or stroke can be dramatically reduced through simple and inexpensive changes in diet, exercise, and nutritional supplementation. Once you understand your level of risk and know the state of your cardiovascular health, you can develop a program to meet your needs.

Exercise will not make up for a poor diet

We've all been taught the value of exercise both for health and losing weight. Even if we do make it a regular part of our daily or weekly activities, exercise alone will not make up for a poor diet lacking in the basic nutritional value to support a healthy heart and cardiovascular system as well as an overall healthy body.

You cannot medicate your way to good health

There are a wide variety of pharmaceutical products used in the prevention and treatment of heart disease that are saving lives daily. These are especially valuable for patients who have advanced disease or have suffered a cardiac event.

That said, too often people want the quick-fix solutions in the form of a prescription medication when simple steps in diet and nutrition would provide a much healthier alternative. In addition to being expensive, few of these medications come without some side effects.

Statins, which focus solely on lowering cholesterol levels, may be the most overprescribed drug for reducing the risk of heart disease. While statins have been essential in treating certain states of cardiovascular disease, many physicians question the use of statins as a long-term strategy for reducing the risk of heart disease in otherwise healthy people with no symptoms or history of the disease. One cardiologist indicated that nearly one-third of the patients he sees are statin intolerant, suffering common side effects such as muscle pain and weakness, flu-like symptoms, and soreness. Other more serious side effects can include liver dysfunction and memory loss.

Excessive weight is one of the biggest contributors to cardiovascular disease as well as hypertension and insulin resistance, which lead to diabetes and other problems. People often wind up on multiple medications to address these problems. Many physicians have found that creating a comprehensive program of diet, nutrition and exercise can often dramatically reduce or eliminate the use of drugs for such things as blood pressure and diabetes.



Diet: Most of What We Think We Know is Wrong

STEVEN GUNDRY, MD

Over a 12-year period from 1991 to 2003, the percentage of people with two or more major risk factors for heart disease increased by more than 30 percent. The culprit? The “low fat diet”.

When people were told that fat was bad, what did we do? We switched from foods that were high fat to foods that were low fat, but high in simple carbohydrates and sugar. Simply put, America is on a sugar diet—sugar and things that the body converts to sugar. Americans have eliminated most vegetables and complex carbohydrates from their diet. Yet, these are the very things needed for cardiovascular health as well as overall health and vitality.

Do not go on a diet! Diets don't work because we eventually go off the diet and back to our old habits with the resultant weight gain and increased risk for heart disease. If you switch to a healthy diet, you will find you can eat as much as you want of foods that are good for you and still maintain a trim, health body that dramatically reduces the risk of a heart attack or stroke.

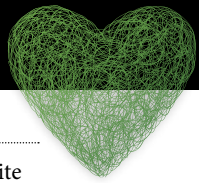
Eliminate the disease- and fat-causing foods in your diet

SAY GOODBYE TO WHITE FOODS.

Gaylord Hauser always advised his patients, *Go home and throw out every white food in your pantry and never eat such food again.* This is probably the best single piece of advice you can follow. The conversion of simple carbohydrates to glucose (sugar) in the bloodstream leading to weight gain, high blood pressure, insulin resistance, and diabetes are the biggest contributors to atherosclerosis and heart disease.

Our eating habits, and even those of “healthy” vegetarians, have become very grain dependent with an excess of bread, pasta, and pastries—not to mention other white foods such as potatoes and rice. The reality is that our bodies are not engineered to be large consumers of grain-based products. And eating whole-grain breads and whole-wheat pasta and pizza crust are no better.

We want to eliminate white foods including flour, pasta, and rice that the body converts to glucose. Eliminate legumes and beans as these are also foods that



your body converts to sugar. The benefits of eliminating these grain-based simple carbohydrates from our diet are:

- We will find we are less hungry (carbohydrates actually stimulate hunger)
- We will be able to eat as much of the healthy foods as we want and still lose weight!

White foods include high-starch vegetables such as potatoes, root vegetables, sweet potatoes, and yams. These foods have a high glycemic index, meaning they are largely converted to sugar. Many vegetables that are healthy when eaten raw become very high in sugar when cooked, including beets, carrots, and corn. Avoid cooking these foods.

RETREAT FROM SWEET. Sugar in all forms (including artificial and natural no-calorie sweeteners) is another white food that needs to be eliminated from the diet. Artificial sweeteners in diet sodas trigger an insulin response just like sugar and promote insulin resistance that can lead to atherosclerosis.

FRUIT AND FRUIT JUICE. We're all told that fruits are good for us, but fruits high in sugar are not. Steer clear of dates, dried fruits of any kind, mangos, pineapple, raisins, ripe bananas, ripe papayas, and seedless grapes. Fruits that are good for you are apples, peaches, apricots, pomegranate seeds, most berries, avocados, and tomatoes (*yes, avocados and tomatoes are fruits*).

Fruit juice is another item that people often believe is healthy but is actually laden with sugar that promotes cardiovascular disease as well as weight gain. Don't be fooled by no sugar added; this just means that there is so much sugar in here already that we didn't have to put any more inside. This includes tomato and vegetable juices.

DAIRY PRODUCTS. Milk and most milk products should be eliminated as well. Mammals were not designed to consume milk past infancy. Milk consumption in adulthood not only leads to atherosclerosis but is correlated with increased rates of breast, prostate, and colon cancer. You should also eliminate cream and coffee lighteners. Fermented dairy such as plain yogurt, kefir, and raw cheeses from grass-fed cows, goats, and sheep are acceptable in small amounts.

There are numerous dairy substitutes that can be readily found in health food stores and many super markets. You can substitute almond or soy milk (plain or flavored, unsweetened only) or plain, unsweetened yogurt.

Cheese has become a staple in the American diet. Eliminate all processed cheese and eat fresh and aged cheeses in extreme moderation. Fresh cheeses include farmer cheese, feta, low-fat cottage cheese, mozzarella, and ricotta. Aged cheeses that are acceptable are bleu cheese, cheddar, goat cheese, gruyere, parmesan, and Swiss.

Change your diet in stages for permanent results

A healthy diet for your heart is a healthy diet for your life. You will live longer and with greater health and vitality. But after a lifetime of bad habits, it is important for you to make the transition to healthy eating in stages. Although this may sound difficult, as you start to change your eating habits, you find out that most of what you currently eat is just that—HABIT.

A process found to be effective for patients even with advanced disease involves changing eating habits in stages, which results in a new way of eating that will protect your cardiovascular health as well as reduce or eliminate excessive weight.

STAGE 1 Eliminate all white and beige foods as well as dairy and fruit juices as outlined above. Concentrate on protein such as meat, poultry, fish, fresh cheeses, and vegetable protein sources. Eat as many vegetables and leafy greens as you like. Add seeds and nuts to your diet (raw and unsalted except peanuts, which should be roasted).

STAGE 2 Increase your intake of vegetables and reduce the intake of animal protein. Continue with nuts and seeds as well as berries and other fruits in moderation. You can also add small portions of legumes and whole grains, but be cautious. At least one-third of the population is gluten sensitive.

STAGE 3 For cardiovascular health and longevity, evolve your diet to one that increasingly relies heavily on vegetables and decreases the reliance on calorie-dense foods such as whole grains and legumes. Reduce the intake of animal protein and think of it as a side dish.



What to eat for a healthy heart

EAT GREEN TO BE LEAN. Nearly all leafy green vegetables are great for your cardiovascular health, and you can eat as much of them as you want—without gaining weight. Eat a lot of leafy green vegetables including:

- ✓ Arugula
- ✓ Beet greens
- ✓ Chard
- ✓ Collards
- ✓ Dandelion
- ✓ Endive
- ✓ Escarole
- ✓ Kale
- ✓ Lettuce, including romaine and Boston (all red and green lettuces)
- ✓ Mustard greens
- ✓ Purslane
- ✓ Radicchio
- ✓ Spinach
- ✓ Turnip greens
- ✓ Watercress

Other vegetables that you can eat without limit include:

- ✓ Artichokes
- ✓ Bamboo shoots
- ✓ Beans (string, green, yellow)
- ✓ Bean sprouts

- ✓ Beets (raw only)
- ✓ Bok choy
- ✓ Broccoli
- ✓ Brussels sprouts
- ✓ Cabbage
- ✓ Cauliflower
- ✓ Celery
- ✓ Cucumbers (and pickles)
- ✓ Fennel
- ✓ Garlic
- ✓ Ginger root
- ✓ Jicama
- ✓ Mushrooms
- ✓ Olives
- ✓ Onions, shallots, scallions, chives
- ✓ Herbs (cilantro, basil, mint, sage, oregano, parsley, rosemary, thyme, etc.)
- ✓ Peppers (hot)
- ✓ Peppers (sweet bell, all)
- ✓ Radishes
- ✓ Sugar snap peas
- ✓ Summer squash
- ✓ Water chestnuts



ESSENTIAL OILS. Oils are essential to the diet but not all are equally good. Eliminate corn and other vegetable oils and substitute extra virgin olive oil, avocado oil, or walnut oil in salad dressings. Avoid using prepared salad dressings, but if you do, use olive-oil based vinaigrettes or Caesar dressing. Avoid ranch dressing at all costs.

NUTS AND SEEDS. Adding nuts and seeds to your diet provide a healthy snack that will reduce cravings. Be sure to eat only raw, unsalted products with the exception of peanuts, which should be roasted. Walnuts are by far the best nut to eat for your heart health! Avoid sunflower seeds, as they contain too much omega-6 fat, and cashews, which are high in sugars. Soy nuts are an alternative if you are allergic.

About protein

The body does not need the enormous quantities of protein that people normally eat, especially in the United States. Vegetables and other plant-based foods provide numerous sources of protein. Protein from meat products is best from grass-fed or free-range beef and chicken. Animals that are raised in pens and fed primarily grain and nutritional supplements lack many essential nutrients necessary for good health found in free-range meats.

Meats should be lean such as beef filet, flank steak, ground sirloin, lamb, pork tenderloin, and wild game such as venison. Poultry, preferably free-range, includes chicken, turkey, duck, goose, and wild poultry.

Seafood is generally good in nearly all forms, but avoid farm-raised fish as these are often fed grain and other artificial products and lack the nutritional value of fish from wild sources.

Other heart healthy foods

CINNAMON stimulates circulation, lowers glucose levels of insulin-resistant individuals, and boosts the ability to metabolize glucose, allowing the cells to use it for energy production.

TURMERIC (CURCUMIN), the yellow pigment in curry powders, is a miracle compound that has been shown to dramatically reduce the incidence of dementia in rats and in human studies.

GREEN TEA AND COFFEE both improve insulin sensitivity when used in moderation (5 to 7 cups per day).

COCOA AND EXTRA DARK CHOCOLATE (cocoa content greater than 72%) can be good for you! Emerging studies suggest that one ounce of extra dark chocolate will improve the flexibility of blood vessels and lower blood pressure (besides making you happy).

Meal replacement bars and powders

When we go to change our diets, one of the most difficult things is eating on the go when traveling or time is short. Low-carbohydrate protein bars and shakes made with unsweetened hemp, rice, soy, and whey protein powders work in a pinch but should be used in limited amounts. Be sure to avoid those that taste sweet, as this can trigger an insulin response.

Beverages

Limit beverages to coffee, tea, and lots of water. Avoid at all costs flavored water and sports drinks, along with fruit juice as previously discussed.

Alcohol consumption should be limited to red wine and straight spirits. Avoid mixed drinks as these add tremendous amounts of sugar. (*Tequila, si. Margarita, no.*)

Cooking for a healthy heart

There are a number of excellent books with recipes for delicious, heart-healthy meals including *Dr. Gundry's Diet Evolution* and *The Paleo Diet*. Converting to a diet that will protect your cardiovascular health and lead to a longer life with greater vitality is easier than you think. Just remember the following Gundryisms:

- ✦ If it's white, keep it out of sight.
- ✦ If it tastes sweet, retreat!
- ✦ If it's green, you'll grow lean.
- ✦ Give fruit the boot.
- ✦ Halt if you taste salt.



Heart Healthy Nutritional Supplementation

STEPHEN SINATRA, MD

Nutritional supplementation needed for cardiovascular health

Cardiovascular health can be enhanced and disease reversed through nutritional supplementation that supports a healthy diet. You should check with your physician before beginning a program of supplementation.

Multivitamins

Everyone needs basic multivitamin supplements that provide the essential vitamins and minerals the body requires for good health. Even if you eat a healthy, balanced diet, you are still not getting all the vitamins and minerals you need. This is due to the depletion of nutrients in the soil and modern methods of farming that reduce the nutritional content of food, as shown in the following examples:



Broccoli

Calcium down nearly 50%
Carotenes down 50%



Collard greens

Vitamin A down 42%
Potassium down nearly 60%



Peppers

Vitamin C down more than 30%



Pineapple

Calcium down nearly 60%



Apples

Beta-carotene down more than 40%



Cauliflower

Vitamins B1, B2, and C down nearly 50%

FISH OIL provides Omega-3 oils that are an essential part of maintaining cardiovascular health. It can penetrate soft plaque and make it less susceptible to rupture and provides numerous benefits including:

- ✦ Lowers blood pressure
- ✦ Decreases bad forms of cholesterol, triglycerides
- ✦ Increases HDL (good cholesterol)
- ✦ Reduces arterial wall inflammation (increasingly viewed as an even bigger problem than the levels of cholesterol)
- ✦ Makes blood less likely to form clots that can cause heart attack or stroke

COQ10, short for Coenzyme Q10, is one of the most powerful of known antioxidants. It protects the mitochondria, which are sometimes described as our cellular power plant because they generate most of the cell's supply of adenosine triphosphate (ATP), a source of chemical energy for the body. Mitochondria are especially prevalent in the heart muscles. CoQ10 can:

- ✦ Decrease blood pressure in patients with established hypertension
- ✦ Reenergize heart cells
- ✦ Protect LDL from oxidation

CoQ10 in the body is depleted by poor diet, genetics, aging, high-intensity

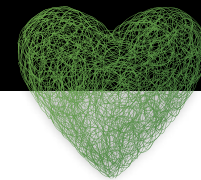
exercise, a hyperactive thyroid, and gum disease. Multiple medications including beta blockers, antihypertensives, oral diabetic drugs, some antidepressants, and statins are also a major cause of CoQ10 depletion.

MAGNESIUM improves the metabolic efficiency of heart muscle cells and can help protect the heart in the acute phase of a heart attack. Magnesium deficiency is increasingly common as the soil and resulting food supply have become deficient in all health-nurturing minerals. It is further depleted by stress. Magnesium can reduce the risk of:

- ✦ Hypertension
- ✦ Cerebrovascular and coronary artery constriction and occlusion
- ✦ Arrhythmias
- ✦ Sudden cardiac death

VITAMIN C, in addition to protecting us from colds, provides many benefits for cardiovascular health:

- ✦ Retards progression of atherosclerosis
- ✦ Helps control blood pressure
- ✦ Helps neutralize vascular wall damage
- ✦ Supports recovery after a heart attack or bypass surgery



D-RIBOSE is a relatively new supplement that is excellent in strengthening ATP, energizing heart muscle cells as well as the rest of the body. D-ribose is the only compound used by the human body to replenish diminished ATP energy stores.

NIACIN is strongly recommended by many leading cardiologists. It performs two vital functions in managing cholesterol levels:

- Raises the levels of protective HDL, which picks up harmful LDL and transports it to the liver for removal
- Helps neutralize small particle LDL cholesterol and Lp(a)—a small, highly inflammatory cholesterol particle

Please see the note in the table below regarding Niacin Flush.*

Supplementation program

The following table is a minimal recommended supplementation program for protecting your cardiovascular health. The center column is the recommended supplementation amounts if you have no indication of disease. These supplements can be readily added to your diet without fear of side effects or conflict with existing medications you may be using. If you have identified the presence of atherosclerosis or other risks through a screening test (see section: Know Your Risk), you may require higher dosages and additional supplements to help reverse or minimize risk for a cardiac event, as shown in the far right column.

RECOMMENDED DAILY DOSAGE		
Supplement	No indication of disease	Presence of disease indicated or established
Broad spectrum multivitamins/minerals	Follow instructions	Follow instructions
Fish Oil	1-2 grams	3-4 grams
CoQ10	50 mg	100-300 mg or more
Vitamin C	At least 500 mg	1,000 mg or more
Magnesium	400 mg	400-800 mg
D-Ribose	5 grams	5 grams three times per day
L-carnitine	500 mg	1-3 grams
Niacin*	125-250 mg	1-1½ grams

* Many leading cardiologists highly recommend niacin. The primary drawback is niacin flush, which is a hot, flushing pins-and-needles sensation you get when you first start taking niacin that may also temporarily redden the skin. It often leads people to contact their physician even though this is normal when initially taking niacin. Although uncomfortable at first, the intensity and duration will lessen or disappear after a short time.

It can also be reduced if the niacin is taken with food. No-flush niacin is available, but it is not considered as effective as regular niacin. Prescription formulations are also available, but are more expensive with minimal added benefit. Whenever starting niacin, begin with the lowest doses (125-250 mg) and if minimal or no flushing is experienced, then gradually increase in 250 mg increments to the recommended total for you. Remember anyone can feel the warm/hot sensation even with small doses. Diabetics taking any form of medication or anyone with liver abnormalities should not take niacin.



If you are at risk, any implementation of a supplementation program should be done in consultation with your physician.

Yes, You do Need to Exercise!

We all know about the need for exercise. But you do not have to be an Arnold Schwarzenegger-like body builder or a marathon runner to maintain good cardiovascular health. In fact, over exercising can increase oxidative stress on the body and can deplete some of the essential vitamins and minerals essential for cardiovascular health—another good reason for proper supplementation.

Thirty minutes of exercise each day goes a long way in reducing the risk of a heart attack or stroke even in obese people. The difficulty for most is making exercise part of your routine if you're over 50 and have not established the habit from an earlier age. Even so, it's relatively easy to add a program of walking, biking, swimming, or aerobics to your weekly activities.

Stress can be a Killer, Too

Stress can also be a significant factor in your cardiovascular health. Stress causes certain chemical changes in the body that increase the risk of cardiovascular disease. In addition, excessive stress decreases the chance of surviving a heart attack or recovering from surgery. People who deal effectively with stress become less prone to angina, high blood pressure, irregular heartbeat, heart attack, and stroke. It is recommended that everyone be cognizant of their stress levels and follow programs and practices that reduce the negative effects of stress on the body and cardiovascular health.



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Recommended Books

Dr. Gundry's Diet Evolution
by Steven Gundry, MD

Reverse Heart Disease Now
by Stephen Sinatra, MD,
James C. Roberts, MD with
Martin Zucker

The Paleo Diet
by Loren Cordain, PhD

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