LOWER CHOLESTEROL WITHOUT DRUGS

A Practical Guide to Using Diet and Supplements for Healthy Cholesterol Levels

by

Roger Mason

What they are saying about
Lower Cholesterol Without Drugs

I really didn't want to change my diet, give up my bad habits or start exercising. You've shown me a way to lower my cholesterol without taking drugs or changing my life. Now, I'm taking ten different supplements not just for my high cholesterol, but for my general health.

John F, Miami, FL

I never knew there way any other way than prescription drugs. The drug I was on costs almost $100 a month, plus the doctors visits and the liver tests they kept running on me. The supplements you said to take are very inexpensive and I don't have to see the doctor all the time now. My cholesterol is much lower on these supplements than it was on the prescription I was taking.

Mary L., Parma, OH

I was overweight, ate the wrong foods, didn't take any supplements and sat around watching TV for exercise. I stopped eating red meat, butter and cheese for a start. I took some of the supplements in the book. I walk the dog every day now. I'm losing weight and my cholesterol is now normal. This is really reasonable.

Paul J., Lodi, CA

I had genetically high cholesterol and triglycerides both over 300. The prescription drugs I took didn't lower them much at all and cost me a fortune! I had pretty much given up until I read your book. I take most of the supplements and changed my diet a lot. I joined the YMCA and swim three times a week now. My cholesterol and triglycerides are now in the high normal range after only three months. I'm glad I discovered your book.

Charles A., Boston, MA

LOWER CHOLESTEROL WITHOUT DRUGS

A Practical Guide to Using Diet and Supplements for Healthy Cholesterol Levels

by

Roger Mason

by
Roger Mason

ISBN 1-884820-64-6
Library of Congress Control Number: 2001093348
Categories: 1. Health 2.Cholesterol
Printed in the U.S.A.

Lower Cholesterol Without Drugs is not intended as medical advice. It is written solely for informational and educational purposes. Please consult a health professional should the need for one be indicated. Because there is always some risk involved, the author and publisher are not responsible for any adverse affects or consequences resulting from the use of any of the suggestions, preparations or methods described in this book. The publisher does not advocate the use of any particular diet or health program, but believes the information presented in this book should be available to the public.

All listed addresses, phone numbers and fees have been reviewed and updated during production. However, the data is subject to change.

Safe Goods Publishing
561 Shunpike Road
Sheffield, MA 02157
www.safegoodspub.com
(888) NATURE-1

Contents

The information contained in this booklet should not be considered medical advice. The ideas, thoughts, and opinions expressed herein belong solely to the author, who is not a medical doctor. Except as otherwise noted, no statement in this book has been reviewed or approved by the Food and Drug Administration.

About This Book

The research around the world on the effects of cholesterol and triglycerides on coronary heart disease (CHD) is simply overwhelming and inarguable. CHD is the primary cause of death in Western countries. All of the tens of thousands of abstracts in Chemical Abstracts (the “Chemists Bible”) for the past 15 years were reviewed by hand. The largest, most interesting, and most thorough studies were selected. The researchers of the world are basically very much in agreement that high cholesterol and triglyceride levels are the main predictors of CHD conditions.

This is a very factual book with endless scientific citations and references to published studies in medical journals. It was meant to be this way so you would know the things you read in here are truthful, honest, and accurate. No one has ever taken the last fifteen years of published research and condensed it down into a short easy-to-read and understand book like this. There are many books available on heart and artery health, but most all of them simply aren’t helpful at all.

Where else are you going to read a review of over thirty supplements that are supposed to lower your cholesterol and triglycerides? Where else are you going to see beta- sitosterol, guggul gum, flax oil, beta glucan, and soy isoflavones recommended as the cornerstone of your cholesterol supplement program? And nowhere else are you going to read an explanation of why your basic hormones affect your blood lipid levels, and how to measure most of these at home without a doctor.

Everyone who reads this book will have the ability to naturally improve their blood lipid profile, have better heart and artery health, and live longer without resorting to drugs or surgery.

OVERVIEW

The information you find in this book can help you choose to do whatever path you like and still lower your cholesterol and triglycerides naturally without drugs, medication or surgery. In an ideal world it would be wonderful to see everyone who reads this book to go on a natural foods diet, walk an hour a day, join a gym, not smoke cigarettes, limit alcohol and coffee, take about twenty supplements a day, and test and balance all their basic hormones. You would never need to test your cholesterol levels again.

Anyone can make continual better choices in the food they eat every day. You can do some kind of exercise you enjoy even if it is just walk the dog a half hour a day. There are programs available to stop smoking and to stop drinking alcohol. It is easy to take at least a dozen proven, inexpensive, effective and safe natural supplements. You can test your hormone levels and take melatonin, pregnenolone, DHEA, progesterone, thyroid hormones, GH, or testosterone where indicated. These are things anyone can do.

You can lower your cholesterol and triglycerides with no change in diet, exercise or lifestyle simply by taking the supplements recommended herein, but that is not the message of this book at all. *Diet is central.* You can see very dramatic changes in your health just by making some better food choices every day, and taking the worst culprits like butter out of your daily fare. You can reduce excessive smoking, drinking alcohol, or coffee consumption, if that is a problem, without giving them up completely if you feel you can't. You can find a physical activity you enjoy and take it up daily. And you can balance most of your hormones inexpensively without even seeing a doctor. You can even keep taking cholesterol lowering medication and use the information in this book to lower the dose and make it more effective - but I hope everyone who reads this will put down their medication forever. You don't need prescription drugs in your life.

CHD is the biggest cause of death in the Western world, but this doesn't need to apply to you after reading this book and making some better choices in your life.

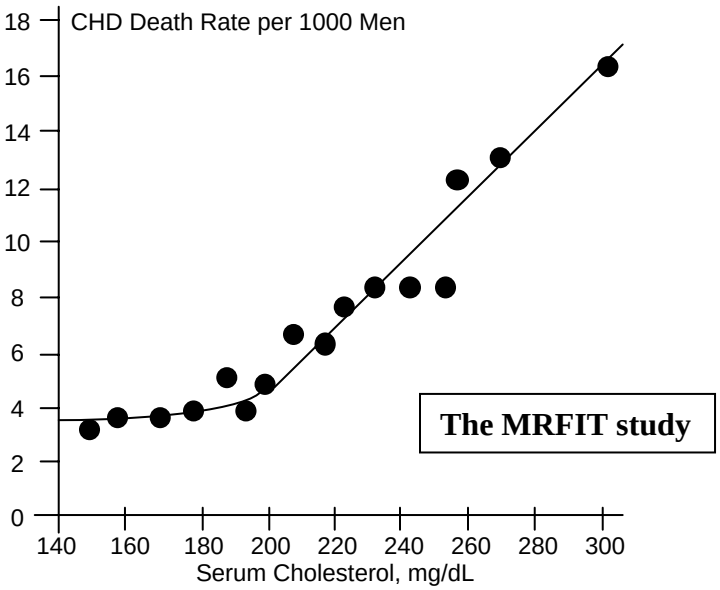
Chapter 1: About Blood Lipids

We have fats (lipids) in our blood that are necessary for life. Vegans who eat no cholesterol whatsoever still produce it in their livers. We are only going to be concerned with cholesterol, high density cholesterol, low density cholesterol and triglycerides. Total cholesterol is the most important to measure. HDL takes cholesterol from the bloodstream into the liver, while LDL takes it back into the bloodstream. Therefore we want high HDL and low LDL levels generally. Triglycerides are esters of fatty acids and glycerol.

You should have your blood lipids measured annually as part of your medical checkup. The usual ceiling of 200 mg/dl for total cholesterol is just too high- 150 is the ideal. Most rural Asian people and vegetarians normally have levels of only about 150, so this is a very realistic goal. Divide your cholesterol level by your HDL level for the cholesterol:HDL ratio. For example if your cholesterol is 200 and your HDL is 40 (200 divided by 40) you have a ratio of 5.0. Men should be 4.0 or lower and women 4.5 or lower. Triglycerides should be under 100. You can also use the home test kits available in the drug stores, but they only give values for total cholesterol.

Every year about 1.6 million Americans suffer heart attacks and almost one third of them die. The higher your cholesterol level the more chance you have of not only having a heart attack but suffering from stroke, atherosclerosis (clogged arteries), high blood pressure, Alzheimer's, cancer, diabetes, and dying early.

The National Cholesterol Education Program has done much to tell the public about the dangers of high cholesterol. Look at the following chart (Arch. Int. Med., 148,1998) on cholesterol and death rates. 361,662 men aged 35-57 were studied for six years. The men with low cholesterol had only 3 deaths per 1,000 every year, while the men with high cholesterol had 16 deaths per year. *Over 500% more fatalities.* This is a huge difference and clearly proves the diagnostic value of your total cholesterol level.



The Multiple Risk Factor Intervention Trial (MRFIT) study was based on 361,662 men aged 35-57 and was one of the largest, most important studies ever done on heart and artery health in general. This study has been covered in many medical journals due to the tremendous amount of information that was found. You can see for yourself based on the studies of over a third of a million people that the lower your cholesterol down to a level of about 150 the longer you are going to live. The higher your cholesterol the less time you have on earth.

The most popular diet books in history were on the Atkins ketogenic diet, the low carb lifestyle, and the ”glycemic index”. You are told not to eat any carbohydrates, that all carbohydrates are equal, and somehow brown rice and white sugar are the same. You are allowed to eat all the meat and fat you want. It has become a widespread fad to say that lowering cholesterol levels does not extend our lives, low fat diets do not reduce heart disease, and lowering our cholesterol levels is a waste of time and effort. Robert Atkins died prematurely of chronic heart disease in 2004 at only 74, which tells you all you need to know about the value of his health advice. Ketosis is, in fact, a disease state.

It has become faddish for some people to claim that "cholesterol doesn't count" in order to rationalize eating high fat foods they are addicted to. This is the basis of various popular fad diets where you can eat all the meat, dairy products, poultry and eggs you want to. A review of the published medical literature for the past 30 years proves beyond any doubt that eating a diet high in saturated fats causes a rise in blood fats and resultant heart and artery disease among many other health problems such as diabetes and various cancers. Some people have gone so far as to talk about the "dangers of low cholesterol", and this is exposed in Chapter 14: Too Low Cholesterol?"

There are so many studies it is almost impossible to choose which ones to use, so we'll use the reviews and the largest of the studies. One review (Atherosclerosis 118, 1995) from St. Bartholemew's Hospital in London looked at ten major cohort studies around the world. They said, "A systematic examination of the evidence on the relationship between serum cholesterol and ischaemic heart disease shows conclusively that serum cholesterol reduction in populations with high rates of heart disease is an effective and safe method of reducing heart disease rates." All of these very large studies proved that the higher the cholesterol levels the more heart disease, and no matter how much you lowered the levels (down to 150) there were continual beneficial effects. Again, we see that the ideal is about 150 mg/dl.

The MRFIT Study of 356,222 men leaves no doubt as to the facts. A chart from that study is on page 10showing the direct relation of cholesterol levels to heart and artery disease. This review (Circulation, v 88) showed that men from 40 different countries were studied. They showed that CHD rises as soon as your level goes over 150 and this is not just a phenomenon for people with high levels over 200. For every 1% rise in your cholesterol level you have a 2% rise in risk of coronary disease. The researchers said, "The relationship between serum cholesterol and six year risk of CHD death was continuous, graded, and strong over the entire range…" This means the ideal level is about 150 mg/dl and anything over that raises your risk of

CHD. They also found that diet was the major cause beyond any doubt, and milk and butterfat (dairy foods) were especially indicated.

The MRFIT study was also reviewed in the Journal of the American Medical Association (volume 256, 1986). They said, “the relationship between serum cholesterol and CHD is NOT a threshold one, with increased risk confined to the two highest quintiles (groups divided into fifths), but rather is a continuously graded one that powerfully affects risk for the great majority of middle-aged American men.” Again, this means that every point over a level of about 150 increases your chances of heart disease and early death.

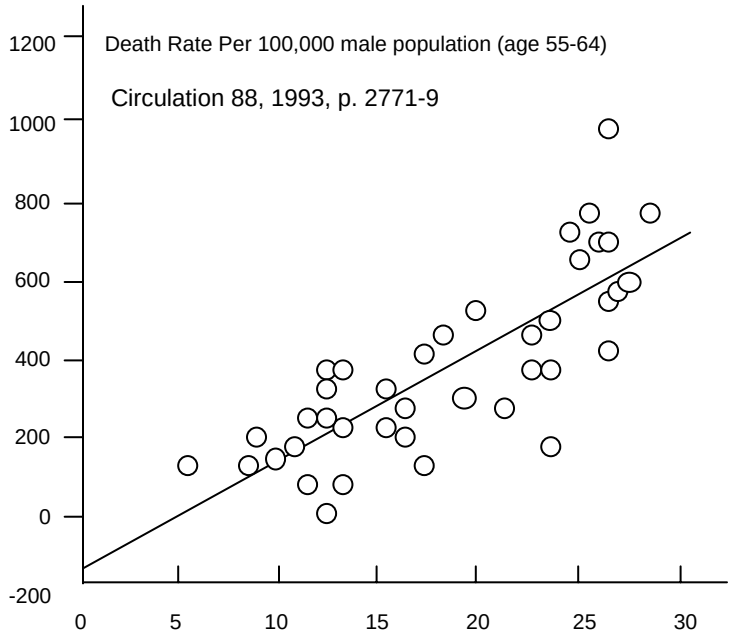
The Seven Countries Study (European Journal of Epidemiology 9, 1993) had been ongoing for 25 years in 1993. Of all the factors they said, “Over 50% of the variance in CHD death rates in 25 years were accounted for by the difference in mean serum cholesterol.” Men in Japan averaged levels of about 165 total cholesterol while men in Finland, the Netherlands and the U.S. had levels of about 250! As always, the lower the level, the less the coronary disease rate. The cholesterol rate is far more important than smoking, drinking, exercise or even blood pressure.

At Providence University in Taiwan (Journal of the American College of Nutrition (v. 118, 1999) a study was done with centarians (people 100 years of age and older) to see what factors allowed them to live so long. Total cholesterol levels were one of the most important factors for predicting longevity. Even though cholesterol levels are supposed to become less predictive as we age this study showed that this is always a central key to longevity.

The American Heart Association published a Special Report in the journal Circulation in 1990 (volume 81) on the importance of cholesterol as the main indication of CHD. “The evidence linking elevated serum cholesterol to CHD is overwhelming”, they said. They reviewed all the major studies especially the Framingham, Helsinki and MRFIT since they are the largest of all. To their credit they said that diet is the most

important factor here and the best solution to the problem rather than drug treatment.

The famous Framingham Study again showed that total cholesterol, HDL, LDL and triglycerides taken together are the single most important determinant of heart disease. We could go on quoting major studies like this, but the point is made, the proof is there and there can be no doubt about this. Please look at the chart below on saturated fat consumption in 40 countries and the death rate from heart and artery disease. Saturated fat in your diet is the main cause of high blood fat levels.



Cholesterol Saturated Fat Index per 1000 kcal/day
The more saturated fat you eat the more coronary heart disease you get based on 40 countries.

A 25 year follow-up was done on the Seven Countries Study (Journal of the American Medical Association 274, 1995, p). Here 12,467 men in seven different countries were studied for 10 years originally. “Across cultures, cholesterol is linearly related to CHD mortality, and the relative increase in CHD mortality rates with a given cholesterol increase is the same.” They found chol-

esterol levels averaged 240 for American men, 253 for European men but only 165 for Japanese men (this was back in 1958 and the Japanese now average about 180). The Americans and Europeans had far higher CHD rates than the Japanese.

At the National Institute of Public Health in the Netherlands Netherlands Journal of Medicine 51, 1997) doctors found that cholesterol levels increased in both men and women as they aged. In both men and women this increased an astounding 60 points from the ages of about 22 to 57. They said the main cause of this was clearly the consumption of saturated animal fats. They also agreed that many cohort studies have proven the correlation between serum cholesterol and mortality from heart disease and this risk is continuously graded with increasing levels.

Again at St. Bartholemew's Hospital (European Journal of Clinical Nutrition 48, 1994) researchers looked at international studies. This time they looked at results from seventeen different countries and concluded, "Variations in serum cholesterol accounted for 80% of the tenfold range of CHD across countries." In other words there was a ten times higher rate of illness and death in the higher levels compared to the lower levels. They also said, "These results show conclusively the efficacy and safety of attaining low cholesterol levels by dietary means in lowering the risk of CHD. Policies to achieve this objective should be a major public health strategy in the economically developed world." These medical doctors said that DIET is the way to do this and not reliance on drugs.

The international published research over the last decade all come to the same conclusions. Total cholesterol, especially when used with HDL, LDL and triglyceride levels, is the best indicator we have for our risk of coronary heart disease - the largest killer by far in the developed world. Yes, you should also test your CRP (C-reactive protein) and homocysteine levels for an even better picture of your heart and artery health.

Chapter 3: Diet, Diet, Diet . . . .

A wholesome natural diet is the most important thing you can do to keep your cholesterol and triglycerides at healthy levels. Diet is the very key to health more than any other factor. If you were eating well you would not have a cholesterol problem. The supplements are very secondary to eating a low fat diet, high in fiber and complex carbohydrates. A diet based on whole grains, green and yellow vegetables, beans of all kinds, fruits, salads, seafood and even some occasional chicken and red meat will allow you to live longer and have a much higher quality of life. Ideally your fat calorie intake would only be 10%, but even a 20% intake would be acceptable. The problem is that Americans and Europeans eat about 40% fat calories and most of these are saturated animal fats. It is animal foods that are the problem for blood lipid levels. Asian people of all nationalities traditionally have very low cholesterol levels as they eat very little animal fat. In fact in rural Red China the average cholesterol level is only about 150. The average American adult level is about 240.

Red meat as beef, pork and lamb is the main cause of high blood fats. You don't have to be a vegetarian to change this, but you do have to moderate the amount of red meat you eat. You just can't eat one-half pound slabs of red meat each day and expect to have healthy cholesterol levels. You can choose to eat red meat more effectively by cutting lean meat into small pieces, marinating it and stir-frying it with vegetables or using it in soups. You would be surprised at how far a four ounce portion will go this way. You can also choose to eat fish and seafood instead of red meat, as these do not raise your cholesterol level.

Poultry and eggs are two of the top ten allergenic foods known. Many people have unknown allergies to both poultry and eggs. It doesn't matter whether this is chicken, turkey, duck, pheasant, goose or whatever. Eggs are actually worse than poultry because of the very high (i.e. 250 mg per egg) levels of cholesterol found in them. Taking eggs out of your diet completely, or at least switching to the no-cholesterol egg substitutes, is a must if you want to have healthy cholesterol levels.

Dairy products are generally full of saturated fat. No fat or low fat dairy products are now widely available but are still full of lactose. Lactose reduced dairy products do not solve the problem nor does organically produced ones. This is discussed in Chapter 4: Fats and Oils. Use soy, almond, or rice milk and cheese instead of dairy as these contain vegetable oils and no lactose. Visit www.notmilk.com or www.milksucks.com to see more on this. Soon you'll be able to buy tasty soy yogurt with very little sugar.

Whole grains should be the basis of your meals. Whole grains are literally the staff of life and have been for centuries. Eat brown rice instead of white, eat whole wheat pasta instead of white, eat whole grain bread instead of white, eat whole grain cold cereals instead of the refined ones, eat more oatmeal, barley, buckwheat and cornmeal. You can eat all the whole grains you want and keep healthy cholesterol levels and lose weight.

Green and yellow vegetables come in a great variety. Learn to cook these fresh in variety of cultural ways by reading cookbooks from around the world. Some people think of vegetables as boring and lacking in taste. This is because they are eating canned and boiled vegetables without flavor. It is not merely the vitamins and minerals in green and yellow vegetables that are important but many other necessary nutrients such as sterols, lignans, antioxidants and other vital constituents.

Beans are considered by some as "peasant food", but beans should be a basic part of our diet. Pinto, black, navy, northern, garbanzo, pink, lentils, lima, kidney, cranberry, fava, red chili, aduki, and other beans make a wonderful addition to our diets and are full of fiber, protein, vitamins, minerals and other nutrients. Studies show that eating beans actually lowers our blood fats. A study at Pontif University in Chile fed beans to laboratory animals and lowered their cholesterol 20% (Journal of Nutritional Biochemisty (v. 3, 1999). At the famous Cornell University laboratory animals were fed beans with their diet for eight weeks. They concluded, "Serum cholesterol in the test animals was also significantly lower compared to the controls". (Journal of Scientific Food Agriculture (v. 57, 1991).

Fruits, of course, have no fat or cholesterol and should be eaten instead of sweetened desserts. Sweeteners of all kinds eaten in excess will raise our blood fats, especially our triglycerides, due to disrupting our metabolism. A study at the University of Minnesota (American Journal of Clinical Nutrition 55, 1992, p. 851-6) showed that when healthy people were given modest amounts of common sugars such as fructose this, "resulted in significantly higher fasting serum total and LDL cholesterol and also caused transient change in postprandial (after meals) serum lactate and triglycerides". Honey, maple syrup, molasses, brown sugar, raw sugar, evaporated cane juice, etc. are no better than regular white sugar. All sweeteners are basically the same simple sugars - sugar is sugar is sugar.

If you don't want to be a vegetarian, seafood can be eaten in moderation as fish and shellfish do not raise our cholesterol levels, are easily digested, and are very nutritious.

What scientific studies do we have that eating a low fat, complex carbohydrate diet really works? Lots of studies and we'll go over some of them briefly. At the Institute of Biomedical Science in Taiwan (American Journal of Clinical Nutrition 58, 1993) young male and female vegetarians were studied who ate diets of 63% complex carbohydrates, but a fat intake of about 25%. Not only did they have consistently low cholesterol and triglyceride levels, but their other blood parameters such as uric acid, fibrinogen, antithrombin, etc. were excellent. You don't have to be a vegetarian at all to gain these advantages in your health.

At the University of Otago in New Zealand (European Journal of Clinical Nutrition v. 52, 1998) young (average age 37) healthy men were given either a traditional high fat Western diet or a low fat diet based on complex carbohydrates from grains, vegetables, legumes and fruit. The men on the healthy diet lost weight, their cholesterol levels fell and their HDL levels rose while their LDL levels fell in only six weeks. They were allowed to select their own foods from a range of foods offered.

Harvard University sponsored The Nurse's Study and did a follow up for many years. The Journal of the American Medical Association (September 28, 2000) reported that the 75,251 par-

ticipants were questioned as to how many whole grain foods they ate. The women who ate as little as two or three slices of whole wheat bread had up to 40% less ischemic strokes (the most common form) than the women who didn't eat whole grains. The more whole grains they consumed the more their risk of stroke declined. This study has been going on for fifteen years now. Strokes are the third leading cause of death in the U.S. and affect men and women equally.

Not surprisingly cholesterol and triglyceride levels are very correlated with obesity. You can easily lose weight without dieting by simply making better food choices. You can still eat the same AMOUNT of food when you just choose better foods to eat. You do not have to eat less food at all; you just have to eat different foods. You do not have to count calories or adjust your portions either. The hunger drive is even more primal and more powerful than the sexual drive and no amount of will power will stop you from eating when you're hungry. You must fill your stomach when you eat and you can fill your stomach with delicious natural food and enjoy your meals greatly while staying slim and feeling good.

Billions of dollars are wasted every year treating the symptoms of obesity because we refuse to look at the cause of this epidemic of being overweight. Americans basically eat high fat, low bulk, low fiber, high-calorie density, highly refined, high-sugar foods. People in Asia, Africa and Latin America generally eat lower fat, high-bulk, high-fiber, low-calorie density, unrefined unsweetened foods for the most part. If you eat a high-fat diet you will have a high body fat ratio. Not only that, but the very same fatty acids you eat will comprise the fat deposits in your body. Vegetable oils are just as fattening as animal fats and have the same amount of calories. You are what you eat, and the more fat you eat the fatter you will be. A stick of butter has about 1,000 calories but won't satisfy your hunger very well. In comparison it would be impossible for most people to sit down and eat twenty apples. A good book to read on how to eat all the delicious natural food you want while staying healthy and slim with low blood fats is Terry Shintani's "The Hawaii Diet". Other good books on eating well have been written by Dean Ornish, Neal Barnard, Susan Powter, Gary Null and Robert Pritikin, and any of the macrobiotic authors such as Michio Kushi.

Saturated fats are basically found only in animal foods, and cholesterol is only found in animal foods. If you didn't eat red meat, poultry, eggs, and dairy products you wouldn't have a cholesterol problem in the first place. Yes, fish and seafood contain some saturated fats and cholesterol, but do not raise your cholesterol or triglyceride levels. Most people are not willing to stop eating meat, poultry, eggs and dairy, and it is certainly their right to eat these foods in *moderation*. However, it is simply impossible for you to eat these foods as staples and maintain healthy blood lipid profiles. A breakfast of bacon, eggs and buttered toast is simply not reasonable. You can reduce the amount of animal foods in your diet and still be happy. You can certainly take the worst of these- like bacon, butter and cheese- out of your diet and replace them with other foods. Ideally you want to eat 20% or less of fat calories, and most all of these from vegetable sources. The best diet for people recovering from heart or artery disease would only be 10% fat calories. Reducing your fat calorie intake to, say, 30% is just not going to show any benefits. *The magic number is 20% or less.* Twenty per cent.

You may be thinking of all those low fat or no fat dairy products out there, but they all contain lactose. Lactose is the problem with dairy in addition to the saturated fat. What is wrong with milk sugar (lactose)? After the age of about three years old all babies stop secreting the enzyme lactase, which digests the lactose. No adult of any race secretes lactase and is therefore unable to digest milk sugar. Asians and Africans especially are sensitive to dairy products. Milk is *the number one* allergenic food on earth. There is a variety of very good tasting soy products you can replace dairy foods with. There are many varieties of soy, rice and even almond milk. Lactose reduced milk is *not* the answer. Meltable soy cheese comes in a variety of traditional cheese flavors such a cheddar, parmesan, mozzarella, and jack.

What oils are good for general use? Corn oil is a fine choice since it comes from grain. Safflower and sunflower oils are a good choice. Sesame is too expensive for general use. Olive oil is also a good choice, but olive oil is not "good for you" no matter

what you've read about it. Soy oil tastes terrible unless it is so highly refined as to be nutritionless. Peanut oil comes from one of the top ten allergenic foods known and should be avoided. Cottonseed oil was never meant for human consumption and is merely sold for profit as a byproduct of the cotton industry. Walnut, avocado, almond and other gourmet oils are expensive and have limited use in salads dressings and such. Please avoid anything that is labeled "vegetable oil" or "vegetable oil blend" as this can be almost anything! Usually it is cottonseed or other cheap industrial oil in food grade. Palm and coconut oil are surprisingly not bad for you *occasionally.* The scare stories that circulated about them were not based on honest studies. These oils are really meant for the people in the hot, tropical areas they are grown and produced.

Now let's talk about canola oil. You've seen this endlessly promoted as a healthy oil. This contradicts the facts completely. The name comes from "Canadian oil" and is from the rapeseed plant (from the Latin "rapa" or turnip), and contains less than 2% erucic acid. The normal rapeseed plant contains so much toxic erucic acid that humans and animals could not eat the oil. The plant was extremely genetically engineered to lower the erucic acid content that it cannot be called natural in any sense of the word anymore. Avoid canola oil and any foods that contain it as this is purely a promotion for profit. The rapeseed plant was never meant by nature for human or animal consumption.

Americans eat an astounding 42% fat calories, mostly saturated animal fats. Whole, natural foods supply all the essential fatty acids you need. You should take a gram (a mere 9 calories) of flax oil daily to supply omega-3 fatty acids, which are lacking in our diets. Eat as little fat in your diet as possible. It's fat that makes you fat, not food. Read the labels of every food you buy to see the percent of fat calories. Bake and broil your food and stop frying it. Stop using fats like butter to flavor your food. Read books on healthy eating by Dean Ornish, Neal Barnard, Gary Null, Robert Pritikin, Susan Powter, Michio Kushi and Terry Shintani. You can eat all you want when you eat whole healthy natural foods like whole grains, vegetables, beans, fruits, salads and even seafood. You don't need to "go on a diet"- you just need to make better food choices.

Chapter 5: Trans Fatty Acids

Hydrogenated vegetable oils actually warrant a separate chapter for many reasons. These are the worst possible fats you can eat and are even more harmful that the saturated animal fats. These are in so many of our foods and often well hidden that it is difficult to avoid them. Hydrogenated vegetable oils are unnatural and do not exist in nature, so our bodies simply do not know how to deal with them much less digest them. People just don't realize how unhealthy these fats are, or they would quit eating countless tons of them every year. Read the labels of every food you buy and you'll be amazed at just how common they really are in America. It is very difficult to avoid these in restaurants since it is not required to list them on the menu.

Margarine is not, "better than butter", and never has been. Food manufacturers found they could extend the shelf life of foods and make them less subject to rancidity by using these cheap, artificial, manmade creations. This is done by subjecting inexpensive vegetable oils, especially cottonseed and soy, to extremely high pressure and heat, and saturating them with hydrogen gas using exotic metal catalysts like platinum. This "saturates" the vegetable oil molecule artificially with hydrogen atoms. This extends shelf life at the cost of your health. In this chapter we will prove to you beyond any doubt that these laboratory creations are hurting your health and shortening your life. Never again knowingly buy or eat any foods containing them. There are many, many studies on the negative effects of trans fatty acids, but we will only look at a few of the most informative human ones done at some of the most prominent clinics in the world.

At the University of Kuopio in Finland (Metab. Clin. Exper. v. 48, 1999) healthy women were studied in a randomized cross-over protocol by giving them the usual high saturated fat European diet or diets high in hydrogenated oil. A mere 5% hydrogenated oil in their diet caused higher total cholesterol, LDL cholesterol, and triglyceride levels in just four weeks. They concluded the hydrogenated fat diet, "resulted in a higher total/

HDL cholesterol ratio, and an elevation in triglycerides and Apo B (which is a negative indicator for heart health) concentrations."

At Tufts University in Boston (Metab. Clin. Exper. v. 45, 1996) elderly men and women were fed either diets of 30% fat calories from corn oil or hydrogenated corn oil margarine for a month. They then switched to the opposite diet for a month. They said, "Mean total cholesterol levels were lowest when subjects consumed the corn oil diet as compared with the margarine diet." This is real world proof on real people that margarine raises your cholesterol levels, contributes to clogged arteries and heart disease, and causes poor quality of life ending in early death.

At the National Public Health Institute in Finland (Am. J. Clin. Nutr. v. 65, 1997) 80 healthy men were studied for their intake of trans fatty acids. Half the men were given diets high in saturated animal fats, and the other half diets equally high in trans fatty acids. They concluded that high amount of the trans fatty acids, "had more adverse effects on lipoproteins than did equal amounts of (animal fats)." The intake of trans fats also worsened the LDL/HDL ratio. This is proof that hydrogenated oils are even worse than saturated animal fats.

Quite a lot of work was done at Wegeningen Agricultural University in the Netherlands. One group of researchers there (Can. J. Physiol. v. 75, 1997) reviewed other major studies on the effects of trans fats on humans. They concluded that it is well established, "trans fatty acids raise serum LDL and lower HDL in humans." They also concluded that trans fats raise lipoprotein A "Lp(a)" which is a basic indictor of heart disease. They warned that because of their adverse effects all foods containing them should have clear statements on the labels as to the amounts therein. In another study there (J. Lipid Res. V. 33, 1992) healthy men and women were given diets based on either vegetable oil, animal fat, or hydrogenated oils. The researchers said, "7.7% of energy from trans fatty acids in the diet significantly lowered HDL cholesterol and raised LDL cholesterol…" A third study at Wegeningen was another review of other major studies with a full 22 references (Curr. Opin. Lipidol. v. 7, 1996). The doctors came to the same conclusions as the others about the adverse effects of trans fatty acids in our diets. Europeans and Americans are eating

about 5 to 15 grams a day and the amount is rising. It should be zero grams a day.

A really impressive study was done with 748 men (Am. J. Clin. Nutr. v. 56, 1992) at Brigham and Women's Hospital in Boston. This was a very in-depth and complex study that measured many physiological parameters and biological markers. It was clear to the doctors that trans fats in our diets raise LDL levels, lower HDL levels, and raise total cholesterol. They said, "On the basis of results from other studies…this would correspond to a 27% increase in the risk of myocardial infarction (heart attack)." Trans fats in your diet equals outright heart attacks.

Some fine research was done at the University of Oslo in Norway (J. Lipid Res. 36, 1995) where young men were fed either margarine or butter in their diets. We've been told for many years now that, "margarine is better than butter" when, in fact, it is worse than butter. The men eating the margarine lowered their HDL levels and their HDL/LDL ratio was worsened. The researchers concluded, "consumption of partially hydrogenated fish oil may unfavorably affect lipid risk factors for coronary heart disease…" You don't have to choose butter or margarine as you can use vegetable oils instead, but only in moderation.

At the famous Harvard Medical School (Lancet v. 341, 1993) doctors reviewed the very large and long term Nurses Study of 85,095 women and how much margarine and hydrogenated oil they reported consuming. It was obvious that the intake of these fats was, "directly related to risk of coronary heart disease", and that "consumption of partially hydrogenated vegetable oils may contribute to the occurrence of CHD." That's pretty clear.

Some very alarming work was done collaboratively at several clinics around the world working together to study breast cancer (Cancer Epidem. Bio. Prev., v. 6, 1997) under the direction of EURAMIC. They studied 698 cases of breast cancer in European women and concluded that, "the adipose concentration of trans fatty acids showed a positive correlation with breast cancer." This means they actually took biopsies (tissue samples) of breast tissue to analyze how much hydrogenated fats were actually in the bodies of the women from their dietary con-

sumption. Now we have a proven link in humans to show the relation of eating these unnatural fats and higher cancer rates.

At Limburg University in the Netherlands (J. Lipid Res. 33, 1992) doctors studied the effects of trans fats on levels of lipoprotein A or Lp(a), which they called a strong risk factor for CHD. There were three strictly controlled experiments on healthy men and women fed either saturated fats, monosaturated and polyunsaturated fats, or hydrogenated oils. The people on the hydrogenated oil diet raised their Lp(a) levels to very dangerous levels in only a month. They concluded, “These short-term experiments suggest that diets high in trans-monosaturated fatty acids may increase serum levels of Lp(a).” If this was done in a month imagine what the effects are year after year.

From time to time you will see studies in medical journals, such as a recent 2001 issue of the Journal of the American Medical Association, claiming that these hydrogenated oils are very safe or even preferable to natural fats and oils. Back to the old “margarine is better than butter” story. You will notice in small print in each of these so-called “studies” that they are funded and paid for by such organizations as the United Soybean Board and the National Association of Margarine Manufacturers. So much for objective science. Unfortunately you can purchase space for your advertising-posing-as-science in most medical journals.

Folks, read your labels. Stop buying any foods that contain hydrogenated or partially hydrogenated oils. Do not eat in fast food restaurants as nearly everything they serve is full of these. You can find such things as potato chips and corn chips that aren’t made with hydrogenated oils. You can buy non-hydrogenated margarines such as Smart Balance®/Earth Balance® in grocery stores. You will be surprised at just how many foods contain these unnatural and dangerous synthetic oils. In 2005 the FDA will require all food products to state prominently the trans fat content of their product on the front of the label. If a food has hydrogenated or partially-hydrogenated oils in it don’t buy it and don’t eat it. When you eat out ask the manager why kind of oils they use in the kitchen. Actually trans fats shouldn’t even be allowed in our foods at all.

This will be the longest chapter in order to cover all the known supplements to help you lower your blood lipids. These will be in alphabetical order.

Acidophilus is important to keep our intestinal flora (good bacteria that digest our food) in balance and prevent growth of the harmful bacteria. It is in our large intestine where we digest fats. Studies at the University of Reading in England, TNO Institute in the Netherlands and other clinics have shown the value of acidophilus supplements to keep your intestines healthy, as that is where fat is digested and cholesterol is either absorbed or excreted. Purchase a good refrigerated brand with 3 billion units per capsule containing several different strains, and keep it refrigerated. There is even a special, stable "spore" form called "lactospore" available that can be used along with regular acidophilus. People in Western societies usually have very low counts of good bacteria due to eating too much food, too much fat, drinking coffee, drinking alcohol, and eating too much sugar. This causes poor digestion and the many resulting problems thereof. Be sure to take FOS and L-glutamine with your acidophilus.

Alfalfa extract has been promoted for lowering cholesterol but there don't seem to be any published studies on this available in the last fifteen years. Alfalfa is a fine herb, but is relatively weak and needs to be extracted. This does not seem to be a good choice for lowering cholesterol.

Alginates are simply salts of alginic acid extracted from seaweeds. These are used extensively as thickeners in common foods such as chocolate milk. These colloids (ultrafine particles) are very effective at lowering blood lipids and removing toxic heavy metals like mercury from our blood. Scientists have known about both of these qualities for decades now, but it never became a popular supplement for some reason. It is rather difficult to find this at the retail level. Search the Internet for sodium alginate if you are interested, as this is an inexpensive, safe and very overlooked way to not only lower your cholesterol but to

remove any excess mercury, cadmium and other metal toxins from your blood. Several companies offer these alginate supplements. Take about 3 grams a day for one year.

Artichoke leaf extract contains chlorogenic acid, cynarin and other effective compounds. There are a few studies that showed if you took enough of it you could lower your cholesterol. Artichoke extract is well known for its beneficial effects on the liver and in treating liver ailments. This is pricey and almost no one offers it, so it is not a practical choice currently. Artichoke extract is a fine herb, but it is rather weak and expensive. It seems to work, but you need to take quite a bit of it, like 1,800 mg a day.

Beta carotene is a good supplement to take and will work with other supplements synergistically to lower cholesterol. Take 10,000 IU daily of any good brand. You can take 25,000 IU the first year. This is a better choice than taking vitamin A, is a basic antioxidant, and has many other benefits for your health generally. There are many studies on beta carotene showing how powerful and effective it is as an antioxidant, how it helps regulate cholesterol metabolism, and protects against atherosclerosis. This should be a part of your daily supplement program for many other reasons than just lowering cholesterol.

Beta Glucan is discussed in Chapter 10.

Beta Sitosterol is discussed in Chapter 7.

Chitin is the natural fiber found in shellfish shells and has been sold as a popular diet aid since it absorbs fat, especially saturated fat, in the food we eat. This will help lower cholesterol if you take about 2 grams a day for one year. Other health benefits such as better digestion were shown in various animal studies. Chitin also has other health benefits which makes it worth taking. Un-fortunately most of the diet products sold actually contain chitosan (an unnatural, synthetic derivative) instead of real, natural chitin. Chitosan (which is deacylated chitin) will also lower cholesterol if you take two grams a day, but you should always choose the natural product over the synthetic one when you can. Read the label. The price has come down on this very much in the last few years making it a more practical choice.

Curcumin is the active ingredient in the spice tumeric. This has been used in Indian Ayurvedic medicine for over 1,000 years. Curcumin is a very impressive supplement with antiviral, anti-flammatory, anticancer, and antioxidant effects as well as cholesterol lowering ability. Get a brand that provides at least 500 mg of actual curcumin stated on the label. There are lots of good studies on using curcumin for lowering cholesterol. There have been many studies published on this for conditions ranging from arthritis to various forms of cancer. This is a most important supplement to take for many reasons and every month there are new studies published on just how effective and powerful it is. This is exogenous so only take it for six to twelve months.

Vitamin C is a fine antioxidant when used in moderation of 500 mg or less a day. We only need about 60 mg and taking megadoses of several grams acidifies our naturally alkaline blood and unbalances our system. This will work with the other vitamins and other antioxidants to give a better quality of blood as long as you do not use large amounts of it. Long term studies show the dangers of using megadoses; 250 mg would be good. Years ago several books were written claiming that taking several grams a days (3,000 to 5,000 mg) would result in great health benefits. Linus Pauling was wrong! Since then we have learned that such doses result in much more debilitating side effects than benefits.

Vitamin E is a definite for heart and artery health. Thirty years ago the medical world would not even admit vitamin E was a necessary nutrient. This is found in whole grains and very deficient in our diets. Take 200 to 400 IU of any good brand you like, but be sure to choose the natural, mixed tocopherols and not just d-alpha. The studies on vitamin E and cardio health go back over 30 years and are overwhelming. This is definitely one of the basic supplements you want to take daily. Your multivitamin will most probably not contain the amount you need, so buy it separately. The media in 2005 has published very misleading reports claiming vitamin E is not good for you. These “studies” compared sickly people to healthy people and found the sickly people died sooner. What a surprise!

Fenugreek extract has shown promise in lowering cholesterol due to its galactomannon fiber content, but the few

animal studies used very large amounts to do so. Until there is good human research this is not a good choice. Fenugreek extract has also shown animal study potential in such conditions as diabetes.

Fibers generally especially psyllium are very good for keeping your cholesterol low and they will also help keep you regular in your bowel movements. You can use sea fiber like chitin, or the usual plant fibers like guar gum, glucomannon, fruit (apple or citrus) pectin, oat bran, wheat bran, or others. Ideally your diet should be full of fibers especially from whole grains and from various beans. The more whole, natural foods you eat like whole grains and beans the less you will need a supplement fiber. Eating a naturally high fiber diet is the best way to get your daily fiber intake rather than taking a supplemental form of it.

Flax Oil is discussed in Chapter 9.

FOS is short for fructooligosaccharides, and is otherwise known as inulin, an extract of chicory root. This has been known about for a long time, but only recently was it discovered that this feeds your good intestinal bacteria. The higher your levels of beneficial flora in your intestines the lower your cholesterol levels generally. FOS is very good for your intestinal health and has good science behind it. Surgeons should be giving this to patients after intestinal surgery to help them heal faster. Anyone with intestinal disorders should consider using this in large doses (like three grams a day) for a year. FOS is widely available and you should take one or two 750 mg capsules a day with your acidophilus. If you can't find this, search the Internet for an inexpensive brand. If you want to improve your intestinal health taking FOS along with a strong brand of acidophilus and some L-glutamine every day will do wonders for you along with abstinence from alcohol and coffee, a low fat/low sugar diet and eating lower calorie foods.

Garlic has many proven health benefits. Many studies over the years have verified the advantage to garlic supplements for better cholesterol levels. Here it is important to get a good, reliable, dependable brand that has high levels of active ingredients stated on the label. If you take an unknown brand you

may well get few results. Of course, you can choose to use lots of fresh garlic in your cooking. The composition of garlic supplements varies greatly so you have to get a good reliable brand to get results.

Glucomannon is a plant fiber from the konjac root and may help you lose weight while lowering your cholesterol. It is inexpensive and widely available, but you should take at least 2-3 grams a day at least at first. This swells up in your stomach giving you a feeling of fullness so you may eat less and still feel full. There are many studies on the effectiveness of glucomannon including human studies. Just take this for one year.

Glutamine is a common amino acid known as "L-glutamine". It is easily found and very inexpensive. L-glutamine has shown very impressive benefits on the health of our intestines. Progressive surgeons are giving it to their patients after intestinal surgery. It also has been shown to spike levels of human growth hormone when taken in doses of one gram two times a day (AM and PM). The scientific literature recently has published many studies on the benefits of L-glutamine supplementation. This is a definite part of your supplement program and will help keep your intestines full of good bacteria and free of the bad.

Glutathione is one of the two basic antioxidant enzymes that help fight dangerous free radicals and are involved in cholesterol metabolism. Ironically, orally taking glutathione itself does a poor job of raising blood levels. Fortunately there is a supplement called N-acetyl-cysteine or "NAC" that effectively raises glutathione levels. Take a 600 mg capsule daily. Unfortunately, the other basic antioxidant enzyme, S.O.D. (superoxide dismutase), is not orally absorbed, and must be injected to get into the bloodstream. NAC is a good general supplement for anyone over the age of 40.

Grape extract can come either from the seeds or from the skins. Grape skin extract is called "resveratrol" and there are claims it will lower cholesterol. The few studies in the literature were funded by the manufacturer. The seed extract is a popular antioxidant and cholesterol benefits are claimed for it as well although the active ingredients are very different. Again, there is a

scarcity of good evidence for this. There are better, more proven supplements to spend your money on.

Guar gum is a very good fiber to use. It is easier to take capsules as mixing this with any liquid will thicken it up so much it will be hard to drink. In fact it is used commonly in very small amounts as a thickener in foods such as salad dressing. There are many studies on the benefits of this fine fiber from the Cyamopsis plant in India. Like other such fibers you need at least 2-3 grams a day for results. Surprisingly, there are lots of studies on this inexpensive natural supplement. This is inexpensive and commonly found. Take for one year. This is a good choice.

Guggul Gum is discussed in Chapter 8.

Lecithin emulsifies dietary fats so they can be digested more easily. It works by decreasing the absorption of cholesterol in our intestines and other mechanisms. This soybean extract is sold everywhere and is very inexpensive. Take a 1200 mg softgel daily. It is also known as phosphatidyl choline and is good for brain health, memory and liver function. (Do not confuse this with "PS" or phosphatidyl serine, which is also a fine supplement for brain health in 100 mg doses.) This is a good choice for good heart and artery health with studies going back for many years. Lecithin has been shown to lower total cholesterol, LDL cholesterol, homocysteine levels as well as being anti-atherogenic and help keep our arteries clear of fat buildup.

Magnesium is a vital mineral that has many proven benefits. Magnesium should definitely be a part of your supplement program as calcium cannot be absorbed without both magnesium and boron. Even if you are eating a diet rich in whole grains (the best source) it is still wise to take about a 200 to 500 mg supplement of any kind. There are numerous scientific studies on magnesium supplements that show various benefits to health including lower cholesterol and even lower blood pressure. Make sure your mineral supplement contains this.

Manganese is a very important mineral that will work with the other minerals in maintaining proper blood lipid levels. You only need about 2 mg a day and this should be found in any good

mineral supplement. *You need all the basic minerals and trace elements* to work together as a team, and manganese is an important and basic one.

Minerals are very important to fat metabolism and digestion. The importance for getting all the minerals and trace elements we need for proper cholesterol synthesis and metabolism is not generally recognized. You need about 20 elements including calcium, magnesium, iron, zinc, boron, selenium, chromium, iodine, molybdenum, manganese, copper, germanium, strontium, nickel, tin, cobalt, rubidium, cesium, silicon and vanadium. A lot of research needs to be done in this area. Soon we will see more research on minerals like molybdenum, copper and zinc and their role in cholesterol metabolism. Boron (3 mg) is especially important as our diets are generally deficient and we have studies linking boron deficiency to hyperlidemia. Vanadium (1 mg) is another mineral important to cholesterol metabolism. You will rarely find this in any mineral formula. Selenium (200 mcg) is generally deficient in our diets and important to maintaining healthy blood lipid levels. Silicon (10 mg) is also rarely found in any mineral product. This is the "forgotten element" and plain silica gel (not horsetail) is a good source. Chromium (200 mcg) is also generally deficient in our diets. Use any regular form of this. All minerals work together in concert, so it is important to make sure you get enough of all of them. Our soils are generally mineral deficient as are our processed and refined foods. Nearly everyone is mineral deficient in some way especially the trace and ultra-trace elements. It is very difficult to find a mineral supplement anywhere with more than ten elements in the amounts you need. Search the Internet under "mineral supplements" to find one with at least 18. Read the label.

Niacin, niacinamide and "non-flushing" niacin are NOT good choices for lowering your cholesterol regardless of the hype you've read. You need massive doses that unbalance your body metabolism, even though it is a water-soluble vitamin. You only need 20 mg a day. There are much safer and effective means of lowering cholesterol than using megadoses of niacin. Remember that *megadoses of anything are contraindicated.* Don't fall for this no matter how many slick articles you read. Many people are now

taking various forms of niacin in large doses when there are much better, more effective and safer ways to lower cholesterol.

Policosanol aka octacosanol is touted as an effective means to lower cholesterol. All the "studies" come from storefronts in Cuba. This is another promotion for money that has no value. In 2005 claims are even being made for better heart health and other benefits. Anytime you see some newsletter doctor or other self-appointed authority on natural health promote this you know they are clueless. Please don't fall for this and waste your money. Who else on earth is warning you about frauds like this?

Pectin is found basically in the inner rind of citrus fruits or in apples. All are very effective. Do NOT fall for the advertisements for overpriced "modified" citrus pectin. Modified pectin is an expensive promotion without merit. Plain old, regular, inexpensive citrus or apple pectin is a very effective fiber. Like the other fibers, you need to take at least 2-3 grams of this daily. Studies abound on the use of pectin and this is a very good choice but you have to take enough of it. There are other health benefits to taking pectin. Take for one year. This is a good choice.

Red rice yeast has been promoted as a wonder drug for cholesterol. Yes, it does work if you take enough of it, but it hasn't proven to be safe, and it is not cheap. Many products do not give you the one gram daily you need to be effective. Supposedly this contains a "natural version" of a statin drug. This is reason enough not to use it! Natural does not necessarily mean good, and this may have unknown side effects. We have no information on long term safety here. There are better, safer and cheaper ways to lower cholesterol. This is another example of advertising convincing people a supplement is valid. Fortunately it has largely fallen out of favor in 2005.

Soy Isoflavones are discussed in Chapter 11.

Spirulina has been hyped for a long time now as some kind of wonder food. It is simply fresh water algae as is chorella. There are no valid studies in the last 30 years on any benefits from taking spirulina, much less to lower blood fats, and no active ingredients were ever identified. You need a lot of this to get the

supposed effects and it is pricey. You must eat 3-4 grams a day. Often you see this sold by promoters and multi-level marketers.

Taurine is a common amino acid and there are many animal studies on the benefits of supplementation. Finally human studies have been done. There are also benefits for diabetes and other blood sugar conditions. Take 500 mg for one year even though it is endogenous and found in our daily food and in our bodies.

Tea (green) really does work and really will help your cholesterol levels. The catechins and polyphenols found in green tea are very powerful antioxidants. Find a decaffeinated brand and do not take the inexpensive brands full of caffeine. This is simply common black tea before it is fermented. Many studies have been done on the health benefits generally and the active ingredients. Green tea extract is a good choice for a lot of reasons. Take this for only one year as it is exogenous and not a common food.

TMG aka trimethylglycine aka betaine has powerful rejuvenation properties for our liver. The human studies on this are most impressive. Take 3 grams of this every day for six to twelve months to cleanse and strengthen your liver. Our livers are stressed from our high fat diets and intake of prescription drugs, recreational drugs, alcohol, coffee, and preservatives. The liver is our largest internal organ and processes the fats in our blood. The liver and gall bladder are central to cholesterol metabolism. This is very important to do!

Vitamins only number thirteen and there is an RDA for all of them. You can easily find a complete vitamin formula with all thirteen in the recommended RDAs. Find one with methyl cobalamin instead of regular B-12 as it is much more absorbable.

If you are over 40, or have a medical condition of some kind, there are other supplements you should be taking for your general health, especially your cardiovascular health. CoQ10 100 mg is a most important such supplement. Do not take any less than this. Lipoic acid 200 mg is important for blood sugar metabolism. Phosphatidyl serine (PS) 100 mg is a vital brain nutrient.

Acetyl-L-carnitine (ALC) 500 mg is another vital brain supplement. Vitamin D3 (400 IU) is really a hormone and not a vitamin at all. You should take 400 IU in addition to a good vitamin supplement that contains 400 IU. You only find this in small amounts in foods like eggs. Glucosamine (500 mg) is necessary for preventing arthritis; 95% of people over the age of 65 suffer from this in some form. DIM (200 mg) is good for normalizing estrogen levels in both men and women. Quercitin (100 mg) is a strong antioxidant well worth taking instead of grape seed extract. Aloe vera gel (100-200 mg of a 200:1 extract) is a fine temporary supplement that can be used for up to a year since it is exogenous. Milk thistle extract (2 capsules) is another temporary supplement that can be used for up to one year to cleanse and tone your liver. Ellagic acid (100 mg) is a third temporary supplement that has shown anti-cancer and other properties.

Do not waste your money on such promotional frauds as lycopene, chondroitin, noni juice, colloidal minerals, sea silver, colloidal silver, coral calcium, deer antler, modified citrus pectin, megadoses of *anything*, OTC (over-the-counter) growth hormone secretagogues, OTC testosterone boosters, *any* weight loss product, *any* sexual rejuvenation formula, all bee products, all homeopathic products, and other such useless promotions.

Chapter 7: Beta-Sitosterol

If there was only one supplement you could take to normalize your cholesterol it should be beta-sitosterol. 300 to 600 mg doses every day will do wonders for you. If you have a more serious problem you can take three capsules a day or 900 mg, but only for a year. Beta-sitosterol is the safest, most studied, most proven, most effective single way known to lower total and LDL cholesterol. The studies on this in the medical journals actually go back 50 years, yet most people have never even heard of it. The published human research is just overwhelming here and every year more studies are done on plant sterols.

Upjohn Pharmaceuticals tried to make a prescription analog (chemical relative) of it decades ago for lowering cholesterol but did not succeed - the natural molecule works best. The scientific community has been well aware of it and clinics around the world have done extensive studies on both humans and animals including gall bladder, bile and liver functions since these are all part of the cholesterol metabolism. The major mechanism that seems to be effective is simply by preventing the dietary cholesterol from being absorbed in the intestines where fat is digested. Another way this seems to work is by increasing the flow of bile acids, which binds the cholesterol in the digestive track and excretes it in the feces. There are just too many studies to count so I've picked a few of the most interesting human studies to relate here.

What is beta-sitosterol? A phytosterol or plant alcohol that is literally in every vegetable we eat. We already eat this every day but we just don't get enough of it. The typical American is estimated to eat only 200-400 mg a day, while vegetarians probably eat twice this much. This is surely one of the many reasons vegetarians are healthier and live longer. Actually the term "beta-sitosterol" in commerce refers to the natural combination of beta-sitosterol, stigmasterol, campesterol and brassicasterol, as this is how they are made by nature in plants. There are no magic foods with high levels of phytosterols, but they can be inexpensively extracted from sugar cane pulp, soybeans and pine oil.

At McGill University in Montreal (Can. J. Physiol. Pharmacol. v. 75, 1997) doctors did a review of the literature on beta-sitosterol and cholesterol metabolism. They researched in detail 18 major studies that used sitosterols to lower cholesterol and triglycerides. They concluded, “addition to diet of phytosterols represents an effective means of improving circulating lipid profiles to reduce risk of coronary heart disease.” This study came complete with forty high quality references and left no doubt about the effectiveness of phytosterols on humans. Also at McGill University (Metabolism Clinic Experiments v. 47, 1998) patients on a fixed diet were given sterols from pine oil for a mere ten days in a strict, randomized crossover study. This was not a low fat or low cholesterol diet at all. They successfully lowered both their total cholesterol and LDL levels in this short term placebo controlled experiment. They concluded, “These results demonstrate the short term efficacy of pine oil plant sterols as cholesterol lowering agents.”

A very interesting study was done at the Center for Human Nutrition in France (Ann. Nutr. Metab. v. 39, 1995) in that healthy people with normal cholesterol levels were given beta- sitosterol to see if their normal levels could be lowered even further. We always think of studies as using unhealthy people with pathological cholesterol levels given supplements to make them normal again. Amazingly enough the healthy people lowered their normal cholesterol levels even more with no change in diet or exercise. In fact, they were a full 10% lower in only a month. This kind of effect is really fascinating. They said, “The present results may be of great interest in the prevention of high cholesterol diet-associated risks, especially in the prevention of cardiovascular diseases”. Since beta-sitosterol was so effective for people who didn’t even need it, think what it will do for those people who do need to lower their blood lipids. They concluded, “These findings suggest that a significant lowering of plasma total and LDL cholesterol can be effected by a modest dietary intake of soybean phytosterols.”

A good study was done at the Wageningen Agricultural Institute in the Netherlands, the same clinic that did so much good research on trans fatty acids (Am. J. Clin. Nutr. v. 72, 2000). They gave men and women a margarine containing plant sterols and

got very significant reductions in cholesterol as well as lower LDL levels in only three weeks. Why a clinic would give margarine to people after studying the negative effects of hydrogenated oils is another matter. Again, these were healthy subjects with normal cholesterol levels, yet they still got great benefits very quickly with no change in diet or exercise.

At Uppsala University in Sweden (Eur. Heart J. Supp. 1, 1999) the doctors wanted to give the volunteers the phytosterols in conjunction with a cholesterol lowering diet to see the results of a more comprehensive lifestyle program. The results were really impressive in that the men and women lowered total cholesterol a full 15% and LDL cholesterol a full 19% in less than a month. The shows the very dramatic results you can get with just adding some reasonable dietary changes even without any exercise program at all.

Smart doctors have learned that adding these phytosterols to their usual prescription “statin” drugs makes them far more effective and the toxic dosages can be lowered. This is NOT my advice at all since the point of this book is to show you how to lower your blood fats naturally without drugs, but it does make a valid point certainly. At Grosshadern Clinic in Munich (Curr. Ther. Res. 57, 1996) doctors found double the cholesterol lowering benefits when sterols were added to the usual regimen of lovastatin. These statin drugs are so dangerous that liver function tests have to be given periodically to make sure the liver still functions reasonably. People with liver problems cannot take these drugs at all, but can and should, in my opinion, use supplements like beta-sitosterol. Some people prefer to use prescription drugs even though there are natural alternatives available that are as much or more effective, certainly much safer and less expensive. Such people should definitely add beta-sitosterol to their regimen of statin drugs along with the other supplements discussed in this book.

At the University of British Columbia at their St. Paul’s Hospital (American Journal of Medicine, v. 107 (1999) a very impressive review was done complete with 86 references of using plant sterols to lower total cholesterol and LDL. They said of the recent research, “ In 16 recently published human studies that used phytosterols to decrease plasma cholesterol levels in a total

of 590 subjects, phytosterol therapy was accompanied by an average 10% decrease in total cholesterol and 13% decrease in LDL cholesterol levels." This is the best review to date and should convince anyone of the effectiveness of sterols over drugs.

At the University of Kagawa in Tokyo two studies were done. The first was done on healthy young men who were given plant sterols for only five days. In this short time their cholesterol levels fell measurably (Joshi Eiyo Daigaku Kiyo 14, 1983). The second study was done on healthy young women (same journal 15, 1984 p. 11-18) again giving them plant sterols for only five days. "Administration of phytosterol (mainly sitosterol) increased the output of fecal cholesterol." These were all healthy young Japanese people eating a traditional low-fat diet who did not have a cholesterol problem to begin with, yet they received measurable results in only five days.

At the University of California in San Diego men were isolated in a hospital ward and fed 500 mg of cholesterol and then beta-sitosterol supplements (American Journal of Clinical Nutrition 35, 1982). This resulted in a 42% decrease in cholesterol absorption in the intestines. They said, "Evidently, the judicious addition of beta-sitosterol to meals containing cholesterol rich foods will result in a decrease in cholesterol absorption with a consequent decrease in plasma cholesterol."

The University of Helsinki took a big interest in lowering cholesterol with plant sterol therapy back in 1988. The first study (Clinical Chimica Acta 178, p. 41-9) studied familial (genetic) hypercholesteremia. The higher the sterol levels they found in the patients blood the more cholesterol was excreted rather than absorbed. The second study was in 1989 (Metabolism Clinical Experiments 38, p. 136-40). Men were studied again for blood levels of sterols and they found the higher the levels the more cholesterol was excreted successfully. The third study in 1994 (American Journal of Clinical Nutrition 59, p. 1338-46) studied vegetarians who eat twice as many plant sterols as normal people. They showed one reason vegetarians have lower cholesterol levels besides the food they eat is the efficiency of their cholesterol excretion due to their intakes of plant sterols. In the last study in 1999 (Current Opinion Lipidology 10, p. 9-14)

they said, “Plant sterols may be useful for the treatment of hypercholesteremia…they may have a potent cholesterol lowering effect as shown in normal and hypercholesteremic men and women with and without coronary heart disease and diabetes mellitus.”

The best published review of all was from the University of British Columbia (American Journal of Medicine v. 107, 1999). This included a full 86 references, and went over sixteen different human studies using plant sterols to lower cholesterol and triglycerides since 1951. “In sixteen recently published human studies that used phytosterols to decrease plasma cholesterol levels in a total of 590 subjects, phytosterol therapy was accompanied by an average 10% decrease in total cholesterol and 13% decrease in LDL cholesterol.” They found this worked best with high-fat diets; the worse the diet the more results the researchers got. This is the best review to date.

At the University of Calgary the researchers found (Can. J. Cardiol. v. 17, 2001), “…it is clear that phytosterols, when added to a prudent diet, will lower serum total and LDL cholesterol. Numerous well designed studies have documented the beneficial actions of these phytosterols on serum cholesterol.” They point out that either sterols or stanols are both effective. Their estimate is that most Westerners eat less than 300 mg of plant sterols a day which is in agreement with other researchers.

At Washington University in St. Louis (Am. J. Clin. Nutr. v. 77, 2003) plant sterols from wheat germ were used in muffins on patients. “The present study shows that phytosterols intrinsic to wheat germ are biologically active and have a prominent role in reducing cholesterol absorption.”

We could go on all day with studies like this from such well known clinics and hospitals as the University of Hamburg, University of Oregon, Johns Hopkins University, Rockefeller University, and others around the world. The research is so extensive and wide ranging over the last 30 years that it is hard to find and count all the studies. How something so studied, proven, effective and well known to the scientific and medical community has stayed outside of public knowledge is hard to believe. You will

notice that the expensive, prescription, patented and very profitable drugs have been heavily advertised and promoted and are best sellers. There is just no profit in a natural, unpatentable, non-prescription plant extract you can get from sugar cane pulp. If you check vitamin catalogs it still is not easy to find good beta-sitosterol supplements with realistic amounts of sterols. One heavily advertised brand that sells for a high price has only 60 capsules containing a mere 30 mg apiece. You would literally have to take 10 capsules a day to get the benefits you need. You can find brands containing 300 mg with 60 capsules inexpensively if you look around or search the Internet under “beta-sitosterol”.

Many studies have been done in other areas of illness that suggest beta-sitosterol may have great potential in other areas such as prostate disease, diabetes, blood clotting, ulcers, cancer prevention, tumors, immunity, inflammation and other conditions. These studies have been conducted at such institutions as the State University of New York, National Institutes of Health, University of Japan, University of Valencia, University of Stellengbosch and other prestigious clinics who are willing to study an inexpensive natural plant extract that cannot be patented or sold be prescription. You will see more research and more benefits for beta-sitosterol every year.

One last word about the popular margarines that contain these plant sterols and stanols. This is a very expensive and poor way to take them. Adding all that fat to your diet is not what you are trying to do. Some of these margarines are made with hydrogenated oils. Why sell a “health” supplement full of saturated and/or synthetic hydrogenated fat to clog your arteries? Obviously the least expensive and most practical way is to take capsules or tablets.

Chapter 8: Guggul – An Ancient Indian Remedy

What a funny name! Guggul. This is simply an Indian herb from the Commiphora tree that has been well known in India for centuries. Over 2,000 years ago the ancient Sanskrit medical texts spoke of the resin from Commiphora mukul as “clearing the coating and obstruction of channels”, which was their way of talking about clogged arteries from rich food. They also used this for obesity, acne vulgaris, diarrhea, arthritis, rheumatism, and urinary problems. This resin has been a part of Ayurvedic medicine for twenty centuries, but has only recently been discovered in the West. Finally it is being studied in clinics and hospitals for over 20 years now. There have been too many animal studies and not enough human studies unfortunately. Scientists have found, for example, that guggul reduces platelet stickiness so overclotting does not occur in the blood, which causes strokes and heart attacks. A study in 1988 (Planta Medica, volume 4) showed guggul also stimulates thyroid metabolism and function. Increasing metabolism efficiency of the thyroid gland can mean losing weight without eating less. Finally an ancient and established herbal tradition has been validated by western science.

A study in France was reported in Rombi’s “Phytotherapy, A Practical Handbook of Herbal Medicine (1988) showing guggul could lower levels of uric acid in the blood. Gout is known to be caused by the accumulation of uric acid crystals in the joints and other tissues. In fact a study in the Journal of the American Medical Association in 2000 (volume 283, pages 2404-10) found that uric acid levels studied in 5,926 people is an accurate predictor of ischemic heart disease and mortality. They said, “for each increase in uric acid level, cardiovascular mortality and ischemic heart disease increased.” So, guggul has other heart healthy advantages than just lowering cholesterol and triglyceride levels.

Analysis of guggul gum shows the active ingredients are plant sterones or “guggul sterones”. You need about 25 mg a day of these. Read the label carefully to see that you are getting the equivalent of 250 mg of guggul resin with 10% sterone content. To

state how much “extract” is in the product is meaningless if the sterone content is not clearly spelled out. Avoid any brands that do not state clearly how much sterone content is given or gives less than this. It is theorized that the actual mechanisms by which sterones lower cholesterol are by binding bile acids in the intestine, stimulating fat digesting enzymes (lipases), and inhibiting what is called “HMG-CoA” reductase enzymes in the liver which help support cholesterol production. Guggul therefore has several mechanisms of action which lower our blood fats.

You should be aware, however, that guggul is exogenous (not found in regular food or in our bodies). Therefore this will not work for some people, while a few will actually be biologically incompatible (allergic) to it. No matter how well it works for you take this for only up to one year as all exogenous supplements lose their effectiveness after 6-12 months. Endogenous supplements (which are found in common food and in our bodies) ones work for a lifetime. Endogenous supplements would include beta-sitosterol, beta glucan, soy isoflavones and flax oil.

Studies done on real people have shown up to a 14-27% fall in cholesterol levels and an amazing 22-30% fall in triglyceride levels in only 90 days or less when guggul was given to men and women with high blood lipid profiles. This was done with no change in diet or exercise. Imagine the results when you make better food choices, take the other four “cornerstone” supplements, improve your basic hormone profile, and get some regular exercise. One other mechanism thought to be responsible for this kind of effectiveness is that guggul stimulates the liver to take up more of the LDL cholesterol from the blood and destroy it. Lower LDL levels are always better.

In the last two decades clinical studies started appearing first in Indian medical journals. These are traditionally more open to herbal remedies instead of unnatural, toxic prescription drugs. In 1986 a study was published in the Indian Journal of Medicine (volume 84). Then Dr. Satyavati (Indian J. Med. Res. 87, 1988) published a detailed history of guggul resin and the unpublished studies that had been done on blood lipids. Unpublished studies like this can have great validity, but are not seen by the general public. Soon guggul was listed in the modern Indian Pharm-

acoepia for doctors and had medical validity. Another study was published in 1986 in the Journal of the Association of Physicians in India (volume 34). In 1989 another study was published in that same journal (volume 37) called “Clinical Trials with Guggulipid: A New Hypolipidemic Agent”. Later in 1994 a study was published in Cardiovascular Drugs and Surgery (volume 8).

In 1991 Dr. Satyavati published another full 35 page study (Econ. and Med. Plant Res. 5, 1999) relating the history, folklore, economics, pharmacology, chemistry, clinical studies, safety and other beneficial of guggul in addition to lowering cholesterol and triglyceride levels.

At Kerala University in India (Indian J. Exp. Biol. 33, 1995) animal studies were published showing that guggul given to laboratory animals reduced their blood lipid levels quickly and effectively without side effects. In 1995 another study was published in the same journal from the same university where they looked for the mechanism by which guggul lowered blood fats. The doctors found that improved liver enzyme activity increased the excretion of excess blood fats in the feces and thereby removed it from the body, rather than allowing it to circulate in the blood. At the Central Drug Research Institute in India (Phytother. Res. 10, 1996) laboratory animals were fed a high cholesterol diet to give them hypercholesteremia. By simply adding guggul resin to their diets they lowered their blood fats even while keeping them on the high cholesterol feed.

And let’s not leave triglycerides out of the review. In the two Indian Journal of Medicine studies and the Journal of the Association of Physicians it was also found that the triglyceride levels were reduced significantly as well. So, in many subjects we have total cholesterol lowered, HDL cholesterol raised, LDL cholesterol lowered, triglyceride levels lowered and even uric acid levels lowered. All these factors add up dramatically to better heart and artery health obviously.

Finally this got the attention of the American scientists at the University of Pennsylvania School of Medicine in October of 2000. Noting that the Indian scientists had shown such dramatic effects on blood lipids in animals and humans and that they also

discovered the metabolic mechanism by which this worked they were impressed. Dr. Philippe Szapary studied 90 people in a classic double blind study where some patients received a placebo and others received guggul gum. In the spring of 2001 they finally released their findings and verified the Indian studies. This was all accomplished under a grant from the National Center for Complementary and Alternative Medicine.

Other studies have been done but not published. Please remember that increasingly medical journals are far more concerned with expensive, profit making prescription drugs rather than inexpensive natural remedies. One such study involved 200 patients in the classic double blind method for 12 weeks. The ones given guggul lowered their cholesterol by an average of 22% and their triglycerides by an average of 25%. This was done with no change in diet or exercise! This is far more impressive than the mild gains from the toxic statin drugs which are costly, have severe side effects and even require regular liver enzyme monitoring. (Health Supplement Retailer June 1999). This is a natural plant extract with a history of safety for over 2,000 years. The only observed side effects have occurred in a small minority of people who may have very mild digestive symptoms. This is because everyone is biologically unique and some people can be sensitive to certain foods and herbs.

At Jadavpur University in India (Phytotherapy Research v.14, 2000) studied garlic (allicin), Bengal gram seeds (an Indian food), and guggul gum on normal people with no cholesterol or heart/artery problems. Please remember that it is much easier to get results with sick people than with healthy subjects. It can be very difficult to get normal people with no medical problems to improve their health, biological status, and diagnostic factors. They gave the volunteers guggul gum extract and their total cholesterol levels fell an amazing 32% in only a month. The average level was 212 when then started and this dropped to only 143 after one month of supplementation. This occurred with no change in diet or exercise, and no other supplements were used. They concluded rather modestly, “The inclusion of these herbal products in the normal diet may be an alternative effective measure for hypercholesteremia.

It is very important to understand that we eat too many omega-6 fatty acids and too few omega-3 fatty acids. There have been countless studies published on the benefits of omega-3 supplementation. This includes diseases and conditions of all types and not just blood lipids. It is very difficult to get a good supply of omega-3 fats in your diet unless you eat a lot of fatty fish like sardines, salmon, herring and mackerel. This is obviously not a practical means. Most of the studies have, in fact, been based on fish liver oils. Fortunately, the best source in the world is the flax seed. *Any studies using fish liver oils would have gotten the same results with flax oil.* Flax is a cleaner, less expensive plant product that is preferable to fish oils. The omega-6 fatty acids are known as linoleic, while the omega-3s are known as linolenic. (This can be confusing due to the similarity of names.) Let's look at just a few of the human studies using omega-3's to not only lower cholesterol and triglyceride levels, but to improve other important blood parameters generally.

At the University of Toronto (Am. J. Clin. Nutr. v.69, 1999) flaxseed lowered undesirable LDL cholesterol levels in both men and women. At the National Institute of Nutrition in India (Nutr. Res. v.12, 1992) people were given high content omega-3 oils in their diets and their total cholesterol and triglyceride levels dropped; other blood qualities were improved as well.

At the University of Iceland two different groups of Icelanders were studied- native and Canadian. Even though the native Icelanders had higher total cholesterol and high LDL levels (but lower triglycerides) they had far less mortality from ischemic heart disease because they had lower omega-6 fatty acid levels yet three times the omega-3 levels than the Canadians. This low ratio of omega -6 to omega-3 fats in their blood protected them from heart disease and premature death.

At Aalborg Hospital in Denmark (Lipids v. 29, 1994) volunteers were given flax oil (high in omega-3s) or corn oil (high in omega-6s) in their diets in a classic double blind study. They could not taste the difference in their foods. The people given the

flax oil based diet lowered their triglycerides and LDL levels as well as their total cholesterol levels with no change in what they ate or how they exercised. At the University of Oslo in Norway doctors gave fish oil (high in omega 3s) or corn oil (high in omega-6s) to different groups of people for four months. Those people getting the omega-3s lowered their LDL levels significantly and improved their other blood parameters generally.

At Ulleval Hospital in Norway (Scand. J. Clin. Lab. Invest. v. 54, 1994) another classic double blind study was done with 57 patients, all of whom had high cholesterol levels and had undergone heart bypass surgery. Those patients given the omega-3s lowered their triglyceride levels significantly, but also improved their glucose homeostasis (blood sugar metabolism was normalized), which leads to diabetes when unbalanced.

At the University of Regensburg in Germany 35 men with heart disease were given a double blind study for vegetable based omega-3 fatty acids and fish oil based omega-3s. Both groups lowered their total cholesterol and LDL levels. This is an excellent study to demonstrate that whatever the source, fish or flax, the benefits still occur equally.

At the Northern General Hospital in Britain (Lipids v. 27, 1992) 365 people with diagnosed heart disease, high cholesterol, or a family history of heart disease were given a fish oil supplement high in omega-3 fats, but no other dietary changes for a period of four full years. The ones getting the omega-3 supplement suffered a mere l% heart attack rate in this time, while the ones who got no supplement suffered a drastic 9% heart attack rate. This proves the long term effects and how the benefits accrue over time. The fish oil group lowered their total cholesterol, lowered their triglycerides, raised their HDL levels, and lowered their undesirable blood fibrinogen levels as well.

At the Jordan Heart Fund Foundation in New Jersey (Am. J. Clin. Nutr. v.12, 1993) doctors gave flaxseed and vitamin E supplements to patients with hypercholesterolemia for three months. Their cholesterol levels fell, and their LDL levels fell as well. Platelet aggregation decreased to more desirable levels and other blood measurements were improved.

At the United States Agricultural Research Service in Maryland scientists gave a similar combination of fish oil high in omega-3 fatty acids along with vitamin E to a group of forty healthy men with no history of heart or artery disease. They were fed the usual high fat American diet of 40% fat mostly of saturated animal fats for eight weeks in a double blind study. Here half the men got plain vegetable oil high in omega-6s. At the end of eight weeks the ones getting the fish oil and vitamin E had greatly improved blood profiles not just for fat levels, but also for such factors as red corpuscle count.

It is very difficult to reduce blood pressure in people simply by using natural supplements, since hypertension is due more to stress than anything else. Generally, the only way to lower blood pressure is to make basic changes in lifestyle including diet, exercising, smoking, drinking alcohol and coffee. Studies show that about one fourth of Americans have a higher than desirable blood pressure, and younger people suffer from this more every year. At the University of Trondheim in Norway doctors gave omega-3 fatty acid supplements to men with high blood pressure with no other treatments or changes in their lifestyles (Proc. Scand. Sympos. on Lipids 16th 1991). Amazingly enough they lowered their blood pressures just from taking the supplements. This kind of study is most significant as it shows we can strengthen our bodies to deal with stress without getting a rise in blood pressure, which causes strokes and early death.

At Nycomed Pharma AS in Norway (J. Optimal Nutr. v. 2 1993) 52 men were either given fish oil (with 66% omega-3 fatty acids) supplements or olive oil supplements for three weeks. With the fish oil their fibrinogen levels fell 13%, triglycerides fell an amazing 28% in this short time, and their good HDL levels went up 10%. The men on the olive oil increased their triglycerides a full 27%. So much for the “olive oil is good for you” propaganda. A low fat diet is best, and the lower the fats in your diet the better. Vegetable oils are simply less harmful than animal fats.

At the University of Kansas (J. Appl.Nutr. v. 43, 1991) healthy men with no known heart or circulation conditions were given omega-3 supplements as fish oil. Their triglyceride levels dropped an impressive 36%. What prescription drug at any price

could give results like this? At Kings College in London Brit. J. Nutr. v.68, 1992) healthy males were given fish oil capsules for six weeks. The results were most impressive in that triglyceride and LDL levels fell, and apoprotein-B (Ap-B) levels went up to a healthier level. Other blood parameters such as as platelet aggregation were improved as well. In addition to all this they also found both their systolic and diastolic blood pressure levels fell. Again we find omega-3s have the power to lower blood pressure with no change in lifestyle. The same results would have been obtained with flax oil.

At Uppsala University in Sweden volunteers were given fish oil supplements or a placebo for two weeks in a double blind study. Then the groups were switched and the ones getting the fish oil now got the placebo (Nutrition Research v. 12, 1992). Constant and regular measurement of their blood was continually taken. Dangerous Lipoprotein-A (Lp-A) was lowered by 19%, total cholesterol fell as did triglycerides, and HDL levels rose in the supplemented groups. You could hardly ask for anything better than this with an inexpensive natural food supplement.

At the Women's University in Japan 50 healthy young women with no heart or circulatory problems were studied for a wide variety of diets. These ranged from 15% fat calories all the way to 40% fat calories. Their diets literally and directly determined the quality of their blood, especially the ratio of omega-3 fatty acids to omega-6 fatty acids they ate each day. The women with the highest levels of omega-3s and the lowest levels of omega-6s had the lowest total cholesterol and triglyceride levels and the highest HDL levels. (Nippon Eiyo v. 49, 1996). This shows direct blood measurement compared to diet in normal people and why we should eat less fat and oils of all types and balance our omega-3 to omega-6 ratios by taking flax oil supplements.

Please remember that flax oil is better choice over fish oil for a variety of reasons. Buy it and store it refrigerated. Ground flax seed is even better, but few people will actually add freshly ground flax to their food every day.

Chapter 10: Beta Glucan

Beta glucan is a polysaccharide found in oats, barley, yeast and mushrooms. The miraculous powers of beta glucan to lower cholesterol and triglycerides and strengthen our immune systems have been known about for more than a decade now. It has been all but impossible to economically extract it from even inexpensive oats and leftover beer brewing yeast. Finally, in the year 2000 technology had advanced and you can now get inexpensive beta glucan capsules. You can now get a bottle of 60 X 200 mg for ten dollars. At the University of Hamburg in Germany it was shown that all 1,3 configuration beta glucans have the same biological potency whether they are derived from oats or yeast -the two major sources (Carbohydrate Research 297, 1997). They said, "All glucans investigated, regardless of molar mass and solution structure, stimulate the investigated immunological measures…" Just so you will know, yeast and mushrooms are 1,3/1,6 arrangements, while oat and barley are 1,3/1,4 structural arrangements. They are all basically true 1,3 beta glucans. Some companies will tell you one is better than the other in order to sell their product. Please don't listen to such advertising pitches. Read the label and compare products carefully as you need at least 200 mg a day to be effective. You can take twice this safely if you wish.

Actually beta glucan is the most powerful immunity enhancer known to science regardless of cost. This includes interferon alpha. There are many studies on animals and humans, showing the great value it has to strengthen our immune systems and even the potential to help against tumors and cancer growth. At the University of Saskatchewan in Canada (Microbiol. Immun. 41, 1997) researchers showed the power to stimulate the immune system. Other studies have found such potential uses as fighting infections, improving intestinal flora, irritable bowel syndrome, diabetic conditions, ulcers and digestion. This, however, is a book on cholesterol so that is what we'll stress. There are many, many studies on blood lipids so we'll just talk about some of the more interesting of the human studies.

At Harvard Medical School in Massachusetts (Crit. Rev. Food Sci. Nutr. 39, 1999) doctors found that both oat and yeast beta glucans lowered serum cholesterol levels. They did this by simply adding beta glucan to the diets of the people they studied. Notice that there is no use of drugs here and this comes from Harvard Medical School where they are traditionally concerned with prescription drugs and not natural plant supplements. In their words, “In addition to decreasing the intake of total fat, saturated fat and dietary cholesterol, blood serum cholesterol can be further decreased by dietary fiber, especially from sources rich in beta glucan such as oats and yeast.”

At the University of Syracuse in New York 71 men and women with high cholesterol were given various combinations of low fat diets or regular diets with and without oat beta glucan. In a matter of weeks total cholesterol levels were reduced as much as 17% (Journal of the American Dietary Association 90, 1990). Their high-density cholesterol levels were also increased significantly. This shows the benefit of making better food choices along with taking effective supplements since the people who ate the low fat diet while taking the oat supplement got the best results.

At the University of Massachusetts (Am. J. Clin. Nutr. 70, 1999) researchers found that giving obese men with high cholesterol levels yeast derived beta glucan lowered both their total and LDL levels by a full 8% with no change in diet. They summarized the study, “Thus, the yeast derived beta glucan fiber lowered the total cholesterol concentrations and was well tolerated.” As usual any side effects were positive in nature.

At the U. S. Human Nutrition Research Center in Maryland (J. Nutr. Biochem. 8, 1997) people were given oat extracts high in beta glucan content and lowered their cholesterol levels with no changes in diet or exercise. The also found that other metabolic conditions improved, so new benefits of beta glucan are always being discovered.

Again at the Human Nutrition Research Center (J. Am. Coll. Nutr. 16, 1997) men and women with high blood lipid levels were given oat extracts high in beta glucan in a crossover study. After only five weeks the groups were switched and those getting

the beta glucan received only the usual American diet. Both total cholesterol and LDL levels decreased significantly. In their words, “A significant dose response due to beta glucan concentration in the oat extract was observed in the total cholesterol levels.” Thorough studies like this in real people at the most prestigious research centers in the world leave no doubt about the power of beta glucan to lower blood fats.

At Industrial Research Limited in New Zealand (Carbo. Polymers 29, 1996) researchers used barley derived beta glucan to try and understand the actual metabolic mechanisms by which it lowered blood fats. They first discovered that it increased the secretion of bile acids from the gall bladder. By using highly sophisticated NMR spectroscopy techniques they found the situation to be more complicated than the mere enhanced gall bladder activity. We are more concerned with the practical matters that beta glucan actually works rather than the how and why of it all.

At the University of Lund in Sweden (Ann. Nutr. Metab. 43, 1999) 66 mildly hypercholesterolemic men were given oat milk in their diet high in beta glucan content for five weeks. This was a classic double blind study where half the men received rice milk with no beta glucan. Of course the men getting the oat milk lowered their total cholesterol and they said, “It is concluded that oat milk has cholesterol reducing properties.”

You can see from studies like these there is no doubt that beta glucan is a safe, effective, powerful, proven and inexpensive way to lower your cholesterol levels, yet most people have never even heard of it. Most vitamin companies don’t even sell it and it can be difficult to find a reliable, strong, inexpensive brand in your drug store or even in your health food store. People keep taking dangerous, expensive prescription cholesterol-lowering drugs when then can use natural remedies like beta glucan. Now that you have this book in your hands you know better.

In addition to the benefits we’ve just covered, it is important to take this because it may well be the most important immune enhancer known to science. Beta glucan strengthens our immune systems so we have optimum healing power in our body and fight off infections of all kinds whether bacteria, fungi or

viruses. You should understand that it is very difficult to study human beings for immune function. Animal studies are used because obviously you can't infect humans with deadly microorganisms, and then give half of them beta glucan and see who lives and who doesn't. Animal studies have shown results for such conditions as infections of many types, tumors, diabetes, intestinal function and ulcers.

The animal studies have been done for the last ten years in clinics worldwide and published in the major medical journals but beta glucan has only become economically available to consumers in the last few years. In fact only in the year 2000 did the price fall enough to allow you to buy 100 mg and higher capsules reasonably.

At the University of Saskatchewan beta glucan protected mice from deadly injections of Staphalococcus aureus. In another study nice were injected with equally deadly Eimeria vermiformis but beta glucan protected them. And yet in a third study mice were given the toxic drug dexamethasone and then injected with the deadly Eimeria virus. Even after their immune systems were impaired by the drug the beta glucan protected them. At SRI International the Euglena gracilis virus was injected into various test animals but beta glucan stopped them from dying. At the University of Kansas pigs were given deadly Staphalococcus suis and beta glucan saved them. The doctors there did an in-depth study of various immune system markers to see how it worked.

At the Mayo Clinic lung cancer in mice was reduced by beta glucan. At Tokyo College doctors found strong anti-tumor properties for beta glucan. At Tokyo University doctors found anticancer activity in mice when given beta glucan and suggested they be used as, "biological response modifiers in cancer patients." At Wuhan University they found powerful anti-tumor activity in mice given beta glucan. At the University of Louisville they found the anti-tumor effect of beta glucan was largely due to enhancing beneficial natural killer (NK) cells. Please read my book "What Is Beta Glucan?" for more information. This is a basic supplement you should be taking daily for many reasons.

Chapter 11: Soy Isoflavones

Surprisingly, this chapter is not going to try to persuade you to eat more soy foods. Eating more soy foods is a fine thing to do, but it is not a practical way to get sufficient isoflavones into your diet. It just isn't realistic to tell Americans to eat a lot of tofu (a highly refined food anyway), tempeh, annato, seitan, soy sauce, soy flour, soy sprouts, boiled soybeans, soy cheese, and soy milk. You could drink an eight ounce glass of soymilk every day, but that would add 120 unneeded calories every day. (This would come to 44,000 unneeded calories a year.) It's better to use it for your cold cereal and in cooking than as a beverage.

There are two main isoflavones we are concerned about which are genestein and daidzein. These are not "phyto-estrogens" as you have been told endlessly. They are, in fact, flavones and completely unrelated to estrogen or any other hormone. Flavones are plant pigment flavonoids, while estrogens are steroids secreted by the endocrine (ductless) glands in animals. There are countless studies on the benefits of isoflavones for most every medical condition and new ones appear in the journals every week. We are just going to look at some of the most impressive human studies that show value in improving blood lipid profiles. There are many other reasons to take these and this should be a basic part of your supplement program. You need about 40 mg a day, so read the label on your supplement carefully to see that you are getting a total of at least this much of combined genestein and daidzein.

At the Panum Institute in Copenhagen (Am.J. Clin. Nutr. v. 69, 1999) people were given soy protein which lowered their LDL levels while raising their HDL levels in only six weeks with no change in diet or exercise.

At Baylor College in Houston (Am. J. Clin. Nutr. v. 68 Supp, 1998) subjects were given soy protein which, again, lowered their LDL levels while raising their HDL levels in only five weeks. It was interesting to note that in this study both normal people and patients with high cholesterol levels were included and both benefited significantly. It is difficult to get people with normal

levels to reduce them even further. Even better results were obtained when the soy supplement was used with the National Cholesterol Education Program Diet, which emphasizes low fat, high fiber and complex carbohydrates.

At St. Michael's Hospital in Toronto (Metab. Clin. Exper. v. 48, 1999) men and women were given a low fat diet with added soy protein. Researchers found the soy supplement very much strengthened the effects of the low fat diet. In their words, "A combination of vegetable protein and soluble fiber significantly improved the lipid-lowering effect of a low saturated fat diet."

At the University of Illinois (Am. J. Clin. Nutr. v. 68 Supp, 1998) postmenopausal women were given soy isoflavones, which lowered their total cholesterol levels while raising their HDL levels and lowering their LDL levels. This was a very well done and professional study. In addition to improving blood lipid levels they found that some of the women increased their bone density and actually reversed some of the effects of osteoporosis. This is just one more way to avoid the many problems of menopause.

A Japanese journal (Daizu Tanakushitsu v. 13, 1992) published a series of articles on soy protein and blood lipids in men and women. These studies were done at Nagoya, Kyushu, Tokai and Tokushima Universities, and the National Defense Medical College. These studies used different diets and different conditions while giving soy supplements to varying subjects. At all five institutions the conclusions were basically in agreement that modest soy supplementation lowered cholesterol levels and improved the HDL/LDL ratios significantly in a short period of time.

A second study at the University of Illinois (Am.J. Clin. Nutr. v. 71, 2000) studied men of widely varying ages with hypercholesterolemia. They gave them soy supplements without any changes in diet or exercise. These men lowered their cholesterol levels significantly in only six weeks.

At the Dunn Nutrition Center in England (Brit. J. Nutr. v. 74, 1995) premenopausal women were studied in depth for a full nine months. Of course their cholesterol levels improved when they were fed soy supplements containing isoflavones, but they

found other very positive benefits to their health as well. Their hormonal metabolism improved generally, and their menstrual cycles became more regular and less problematic. This was a very unique long term study that shows there are more benefits to soy isoflavones still to be discovered.

The American Heart Nutrition Committee (Circulation, December 2000) advised Americans with high cholesterol to add soy protein to their diets. Dr. Erdman at the AHNC said that numerous studies show that soy isoflavones lower LDL, raise HDL, lower triglycerides and lower total cholesterol levels. Endorsements from such prestigious groups as this should be heeded.

At Wake Forest University in North Carolina (Arch. Int. Med. V. 159, 1999) doctors studied the effects of soy isoflavones on men and women with high cholesterol levels. By giving them a daily supplement over just a two month period they successfully lowered their LDL levels thereby improving their LDL/HDL ratios. They also lowered their total cholesterol. This study was extremely professional and very well done.

The Harvard Medical School publishes “The Heart Letter”, which is a very well done monthly report on the studies regarding cures for heart and circulatory problems. In the October 2000 issue they said that studies overwhelmingly prove adding soy to the diet lowers cholesterol and thereby lowers the risk of heart and artery disease. They went on to say that soy supplements make the blood vessels more elastic, and can actually lower systolic (the more important of the two readings) blood pressure. Basic lifestyle changes are usually the only way to lower blood pressure at all, so this is most impressive.

At Wake Forest University again (Menopause v. 5, 1998) healthy, non-hypercholesterolemic, premenopausal women were given a soy supplement with 34 mg of isoflavones in a classic double blind crossover study for six weeks. Not only did they lower their total and LDL cholesterol levels but their systolic blood pressure declined as well. They said, “Soy supplementation in the diet of …women resulted in significant improvements in their lipid and lipoprotein levels, blood pressure and perceived severity of

vasomotor symptoms". Remember these were healthy women who further improved their heart and artery health.

We could go on with study after study on real people given soy isoflavone supplements in clinics around the world, but you see these benefits are established clearly in the medical field. Soy isoflavones improve our blood profiles significantly, improve the quality of our arteries, and are even shown to lower blood pressure. All of these effects can be obtained without any change in diet or exercise. When combined with other proven supplements, a low fat diet and reasonable exercise (such as walking) the effects are even more dramatic.

It has become popular in certain circles, on the Internet, and from some misguided self-appointed experts to talk about the supposed "dangers" of eating soy foods. This misinformation has become rather popular despite the fact there are never any valid references to verify their claims of "dangerous side effects" from eating soy foods and taking soy supplements. It should be obvious that the billions of Asian people who have eaten soy foods as a basic part of their diets for centuries never suffer these illusory "side effects". You can see from the many clinical studies that there are never negative side effects from the patients taking these supplements. We have only discussed the benefits of soy isoflavones for blood lipids basically. Entire books have been written about the benefits of soy isoflavones for many other conditions. In fact, new studies are published constantly and new benefits are discovered all the time. People are becoming aware that *the real dangers lie in milk and milk products*, and the real benefits are found in soy products. All adults of all races are lactose (milk sugar) intolerant. Milk and dairy consumption is down more every year especially among African and Asian people who are most lactose intolerant. Now grocery stores carry more and more soy milk, soy cheese, soy yogurt, soy cream cheese, soy "meats", various forms of tofu, and other soy products all the time. The dairy interests are understandably upset about so many people switching from dairy products to soy products and are the ones promoting the disinformation campaign about soy foods. Please realize this propaganda is from the meat and dairy corporations and not from real scientists.

Chapter 12: Lifestyle

Aside from the food we eat every day, let's take a quick look at lifestyle. How much exercise do you get every day? Do you drink alcohol? Do you drink coffee? Do you smoke cigarettes? Are you under too much stress?

Exercise is the most important lifestyle factor to look at. Do you do physical work at your job? Do you enjoy any sports every week that give you a workout like golf or tennis? Do you belong to a gym or have workout equipment in your house? Are you a member of an indoor swimming pool? Do you take a walk every day? Walking is the most practical, most effective, and most enjoyable exercise for many people. You can lower your blood lipids as well as lower your blood pressure with no change in diet simply by walking a half hour a day. Studies abound on the cholesterol lowering benefits of any exercise even for young people.

At the University Medical School in Turkey (Indian J. Physiol. Pharmacol. v. 43, 1999) it was shown that men of any age who exercised regularly had lower total cholesterol, lower LDL levels, higher HDL levels, less body fat, and all in all less risk for coronary heart disease. At the University of Maryland (Med. Sci. Sports Exer. v. 26, 1994) a ten month, long-term study was done on older obese men using a combination of a low-calorie diet and aerobic exercise. Of course the men lost weight and body fat, lowered total, LDL and triglyceride levels, and raised HDL levels. The same university did another long-term, nine month study (Metab. Clin. Exp. v. 48, 1999) on middle-aged overweight men. This time they put them on the American Heart Association (AHA) diet, which really isn't very strict or hard to follow at all, and had them do aerobic exercise regularly. They got the same results as in the previous study, and the men improved their health very much. At the Center for Adult Diseases in Osaka (Domyaku Koka v. 21, 1994) doctors took 459 middle aged healthy men and just had them walk every day. No change in diet, lifestyle or supplements - just walking. They found their HDL levels went up and the risk for coronary heart disease went down almost immediately. At the University of Padua in Italy (J. Sports Med. v.

31, 1991) healthy young male and female athletes were given either aerobic or resistance exercise. Clear benefits resulted no matter what kind of exercise they did. The usual results of lower total cholesterol, LDL levels and triglycerides and higher HDL levels were obtained in healthy, young, well-trained athletes. A similar study was done at the University of Vermont (Metab. Clin. Exp. v. 41, 1992) where the researchers again found whether you do aerobic or resistance exercise it just doesn't matter- you get the same basic cardiovascular benefits. They said," Aerobically trained and resistance trained young males have comparable and favorable cardiovascular disease risk profiles compared with untrained males, and this appears to be related to their low level of adiposity (fat mass) and low intake of dietary fat."

At the University of Pittsburgh (J. Sports Med. v. 35, 1995) groups of both premenopausal and postmenopausal women were asked to walk every day. The postmenopausal women had an average age of 55 and a whopping 38% body fat! The doctors said, "A single bout of walking has the potential to acutely affect the blood lipid profile of premenopausal as well as postmenopausal women". At Texas A&M University (J. Appl. Physiol. v. 79, 1995) middle-aged men were given short-term exercise programs with the usual beneficial results. The researchers said, "These data show that a single session of exercise performed by untrained hypercholesteremic men alters blood lipid and apolipoprotein concentrations". Please note they said just one single session.

You already knew that exercise is good for you and lowers your blood lipids without changing your diet. Think what even daily walking will do when you make some changes in your diet and take proven supplements?

One third of American adults smoke. Smoking is correlated with many major diseases such as various cancers. The biggest and most important heart studies like the Seven Countries Study, and the Helsinki Study have shown over and over there is no doubt that smoking worsens your blood lipid profile, is a major factor for coronary heart disease, is an important factor in many other diseases, and shortens lifespan. The National Cholesterol Education Program published a lengthy report (Arch. Int. Med. v.

148, 1988) on all aspects of treating hypercholesteremia. Examining smoking as a factor they found men with the lowest cholesterol levels had only 1.6 deaths per 1,000 if they didn't smoke, but 6.3 deaths if they did. Men with the highest cholesterol levels had 6.4 deaths per 1,000 if they didn't smoke but a frightening 21.4 deaths if they did. The problem is that nicotine is so addictive it is very hard to stop. There is no reason to quote a list of studies here to show what is already obvious. Smoking is a major factor in heart disease, alters our steroid levels, has countless negative effects on our health, and causes early death. If you want to live a long, healthy life of good quality, and avoid heart and artery disease you have to stop smoking. It is very important to note that when you quit smoking that your health recovers very quickly, and you soon approach the same level of CHD risk as those who have never smoked. *It is never too late to quit*,and you can quickly reverse most of the damage you've done.

The most impressive study was done on biological twins - one smoked and one didn't (Thromb. Haemo. v. 75, 1996) at the Instituto Scientifico in Italy. The twins who smoked had 13% higher triglycerides, 8% lower HDL levels, as well as an 8% higher white blood cell count (which is a negative) along with other negative changes in their blood parameters. They concluded, "Cigarette smoking is associated with an atherogenic lipid profile (i.e. clogs your arteries) and with changes in platelets and white cells potentially reflecting endothelial cell damage." What better proof can you have than identical twins? At the Institute of Biochemistry in Scotland (Eur. J. Clin. Invest. v. 23, 1993) the doctors studied healthy men and concluded, "LDL cholesterol, plasma triglycerides, and VLDL (very low density) triglycerides were found to be substantially increased and plasma HDL cholesterol decreased in smokers." At the Center for Clinical Studies in Florida (Contraception v. 44, 1991) doctors studied both pre- and postmenopausal women. It was clear that the women who smoked had lower levels of HDL cholesterol and were at higher risk of CHD - the biggest single killer of women in the U.S. At Osaka Prefectural College in Japan (Seikatsu Eisei v. 40, 1996) 1,243 Japanese men were studied. They said, "In conclusion, this study of the joint association of cigarette smoking, serum lipid levels and blood pressure with white blood cell counts as a risk factor for CHD confirming previously reported results…"

Please note that the combination of alcohol and nicotine works synergistically together to be much more harmful in effect.

The research showed something fascinating about coffee. One would logically think that it wouldn't matter what kind of coffee you drank, but it very much does. If you drink the regular filtered coffee or instant coffee in moderation (i.e. one or two cups a day) you will less negative effects on your heart. However, if you drink unfiltered, French press, espresso, Turkish and other such types, even two cups a day will affect you very much. This is because the coffee oils are not filtered out. There are other such studies that show the boiled, unfiltered coffee has more harmful effects than the filtered or instant. Some of these studies were done at the Nordic School of Public Health in Sweden, National Institute of Public Health in the Netherlands and King's College in London. If you are addicted and insist on drinking coffee always drink the filtered or instant kinds and never more than one cup a day.

We come to a much more complex problem with alcohol. Most all countries on earth have a serious problem with alcohol consumption. No other drug on earth causes anywhere near the damage that excessive alcohol consumption does. Every major study has shown that excessive (i.e. more than two drinks a day or heavy drinking even once a week) alcohol consumption is a major risk for coronary heart disease. Ironically some studies have shown that people who have only one or two drinks a day and never have more than this actually have less heart disease and better cholesterol levels and live longer than people who don't drink alcohol at all. *Alcohol, even in moderation, is not part of a healthy lifestyle.* If you only drink one or two drinks a day you are probably not going to hurt your blood lipid profile or get more heart disease. Drinking more than two drinks a day, or drinking heavily even one day a week will raise your cholesterol, and you'll have a bigger risk of heart and artery disease. You should be aware that even one or two drinks a day have been shown to put your at higher risk for other diseases and conditions such as diabetes and various forms of cancer. Please don't listen to the argument that moderate drinking is somehow good for your heart and arteries.

Chapter 13: Tough Cases

There are a good number of people with genetically high cholesterol over the 300 level, as well as triglycerides also over 300. Such people are at severe risk for all forms of coronary and artery disease and premature death. Obviously they need to do more to lower their blood fats. Here diet is no longer an option, better food choices have to be made, supplements and hormones are needed, as well as regular exercise.

Let's remember that there is no cholesterol in any plant; cholesterol is only found in animals and animal products. People who eat a pure vegetarian diet (no eggs or dairy) consume no cholesterol at all. Such people generally have levels of about 150 mg/dl and every milligram of this is manufactured by their livers from the plant foods they eat. Genetically high cases must stop eating all beef, pork, lamb, poultry, eggs, milk, and dairy products. Seafood can be eaten in moderation as a four-ounce daily portion. Fatty fish like salmon, swordfish, mackerel, tuna and catfish (yes, catfish is about 30% fat calories) should be avoided. Low fat fish such as flounder, grouper, sole, trout, mahi, wahoo, cod and others are good choices. Shellfish such as crab, scallops, shrimp and lobster do not raise cholesterol when eaten in moderation.

Vegetable oils contain no cholesterol, but these should be very restricted as well. Vegetable oils also are generally high in omega-6 fatty acids and low in omega-3 fatty acids, which is another reason to use as little as possible of these. Americans eat fat too many omega-6 fatty acids and far too few omega-3s. Omega-3 fatty acids are not abundant in common foods, so there are no specific vegetables to recommend to get a good balance of omega-6 versus omega-3. Flax is the best known source and taking two grams of flax oil is recommended. This is a better source than fish oil for a variety of reasons.

Milk and dairy products should be avoided entirely and that includes the low fat and no fat varieties like lactose free, skim milk and no fat yogurt. There are a variety of very good tasting soy, rice, almond and oat products to replace them.

It is very important that people with very high blood fats take all five of the “cornerstone supplements”- beta-sitosterol, guggul gum, flax oil, beta glucan and soy isoflavones. It would also be a good idea to double the amount of beta-sitosterol to 600 mg, double the amount of flax oil to 2,000 mg, and double the amount of beta glucan to 200 mg. The guggul gum and soy isoflavones should remain at 250 mg (10% sterones) and 40 mg respectively.

Many of the other supplements discussed should also be included in your program. This would include acidophilus, beta carotene, curcumin, vitamin E, FOS, garlic, L-glutamine, guar gum, lecithin, pectin and the full complement of minerals that were mentioned. These supplements are inexpensive and generally good for your health in many other ways and not just for lowering your cholesterol.

Hormone balancing in cases like this is no longer an option either. As we discuss in a later chapter, you must test your basic levels by either using saliva test kits or seeing your doctor and having your blood serum levels checked. DHEA and testosterone are the first ones to measure. Do not take these unless you are proven to be low. Melatonin should be used and that can be tested at 3:00 AM with saliva. Transdermal progesterone can be used by both men and women only in different amounts. Pregnenolone should be taken by anyone over the age of forty. If estradiol or estrone levels are too high then changes in diet and lifestyle can lower them. T3 and T4 should be tested. GH can be used by anyone over the age of 50. This is the only book to talk about the effects of our hormones on our cholesterol and triglyceride levels. Doctors are completely unaware of this and don’t test hormone levels for people with severely high blood fats as they should.

Exercise is not an option for such people either. You must get some exercise daily even if it is just briskly walking a half hour a day. This goes hand in hand with weight loss as people with severely high cholesterol levels need to get down to a normal weight. Fasting one day a week on water is a great help here.

Chapter 14: Too Low Cholesterol?

With the popularity of the “ketogenic” diet where you eat all the meat and fat you want, it has become popular to say, “cholesterol doesn’t matter”. Some even claim that cholesterol should not be too low. This is patently ridiculous of course. A popular life extension magazine stated that the optimal range for serum cholesterol is 180 to 200. They further said that cholesterol levels below 180 cause an “increased risk of mortality”. Asinine!

You have seen references to the largest and most comprehensive studies on heart and artery health in the world in this book including the Framingham Study, the 17 Countries Study and the MRFIT Study. These proved that you get benefits all the way down to a level of 150 mg/dl total serum cholesterol.

As we age and reach the age of 70 or more we do start losing the ability to synthesize cholesterol. You can find elderly sickly people who eat a high fat diet, get no exercise, and have very unhealthy lifestyles, yet have rather low cholesterol levels. Therefore, when we reach old age our cholesterol levels become less accurate in predicting good heart health. For older people like this you have to look at their cholesterol results in light of how they live. This makes it even more important to eat a low fat diet, exercise, take effective supplements, balance our hormones and live a healthy lifestyle.

Look at Japan for example. The average cholesterol level used to be about 150 for centuries because of their cultural preference for a low fat diet based on rice, vegetables and seafood. Due to Westernization they now eat much more red meat, poultry, eggs and even dairy products - which used to be unknown there. The average cholesterol level is now about 180, and heart and artery disease have gone up accordingly. The Japanese now suffer from far more hypercholesteremia, high blood pressure, atherosclerosis, aneurisms, strokes and heart attacks. When 125 million people raise their average cholesterol and suffer a resultant rise in heart and artery disease the results are clear and inarguable.

Here we need to distinguish people who have low cholesterol and triglyceride levels due to poor health and poor liver function, and people who have low levels due to a low fat diet and healthy lifestyle. Yes, there have been a few studies to show that sickly people with unhealthy lifestyles with low cholesterol can have a higher rate of uncommon strokes for example. This is because they aren't well in the first place and their low blood fats are due to the fact they are in such poor health.

An excellent review from St. Bartholemew's Hospital in London settles this quite well. They went over ten of the largest cohort studies ever done on cholesterol. Every study agreed that the lower the cholesterol the better regardless of any other factors. The authors concluded, "All of them show a similar effect and none provide any evidence for a threshold below which there ceases to be an effect. The two largest provide strong evidence against a threshold over the range of serum cholesterol covered by the studies" (Atherosclerosis 118, 1995, p. S1-S5).

The high cholesterol crowd loves to refer to an article in the 1989 New England Journal of Medicine (vol. 320). What the doctors really said is that taking all strokes together (hemorrhagic and non-hemorrhagic), the lower your cholesterol level the longer you'll live, and the less total strokes you'll suffer. A few sickly elderly people with low cholesterol had a slightly more hemorrhagic strokes. However, they were eating high fat, high sugar diets and their bodies could no longer produce sufficient cholesterol. Their low levels were due to pathology.

The MRFIT Study of 350,977 men found the lower your cholesterol the better. Men with levels of 140 to 159 only had 60 cardiovascular deaths and 15 strokes a year. Men with levels of 220-239 had a stunning 562 cardiovascular deaths and 39 strokes. 60 deaths or 562 deaths? The average American has a total cholesterol level over 240 by the way.

People who promote this, "don't let your cholesterol get too low" propaganda are simply trying to justify eating high fat foods and lowering the standards for good health. A level of about 150 mg/dl of serum total cholesterol remains the ideal for all races of men and women of all ages.

Chapter 15: Hormone Balancing

Where else are you going to read about the influence of hormone levels on blood lipid profiles? Cholesterol is chemically a hormone. Cholesterol is actually the primary hormone from which all our other sex hormones are derived. Did your doctor ever test your basic hormone levels after finding high cholesterol and/or triglycerides? In fact did your doctor ever suggest to you to test your basic hormone levels for any reason? Even endocrinologists have no idea that your basic hormones affect blood fat levels. The main thing to understand about our hormones is that *they all act together in concert in harmony as a team.* Therefore, we need to balance all of the main hormones as much as possible. When one hormone is deficient (or excessive) the others simply cannot function properly. We are going to talk about estrogens, testosterone, T3/T4, DHEA, pregnenolone, insulin, progesterone, melatonin, cortisol, as well as growth hormone. Men and women have exactly the same hormones, only in different amounts. This could be a very complex and long chapter, but we'll simplify it and not give citations for the hundreds of published studies.

In 2002 the Mississippi Regional Cancer Center published a study, "Hypercholesteremia Treatment: A New Hypothesis" (Medical Hypotheses v. 59, 2002). This work showed that our general endocrine system has much control over cholesterol and triglycerides. They treated each patient individually with bioidentical DHEA, testosterone, pregnenolone, progesterone, triestrogens, and hydrocortisone. They normalized blood fats by balancing the hormone levels of their patients with natural hormone replacement therapy. This is unique, professional and thorough science. It is doctors like this that will lead us into the age of medical enlightenment.

It is a sacred myth in our society that women are somehow "deficient" in estrogen after menopause, and estrogen supplementation is what they need. The truth is that both men and women over 50 in the developed countries are generally excessive in both estradiol and estrone. This is due to many factors such as dietary fat intake, obesity, lack of exercise and alcohol consumption. One in eight American women will end up

with breast cancer, which research shows is a direct effect of high estrogen levels. One in three will end up with a hysterectomy, which is also a direct effect of excessive estrogen. The current program of routine estrogen supplementation for women is a deadly farce. Women should read my book *No More Horse Estrogen!* Statistics show that all American men will end up with prostate cancer if they live long enough. Research reveals that this, too, is a direct effect of excessive estrogen levels. Studies around the world from institutions such as Columbia University and St. Lukes Hospital show repeatedly that high estrogen levels in men are associated with cardiovascular disease in general. Men and women should test their free (not bound) levels of estradiol and estrone to see if they are excessive. If you are too high you can *reduce fat intake*, lose weight, exercise, eat more fiber, and stop drinking alcohol. A study at the Pritikin Longevity Center lowered male estrogen levels (along with cholesterol and triglycerides) dramatically in only 26 days! Simply by giving the men a whole grain, low-fat diet and regular exercise. You can also take proven supplements like 200 mg of di-indolyl methane (DIM) and 1-2 grams of flax oil. (DIM is the direct metabolite of indole-3-carbinol). Excessive estrogen levels have many other dangerous side effects in both men and women.

Medical doctors including endocrinologists don't have the term "estriol" in their vocabulary. Normal pharmacies don't carry it and can't order it. Estriol is the "forgotten estrogen" even though it comprises 80-90% of total estrogen in both men and women. Men are rarely deficient (or excessive in this). Women should test their estriol levels with a saliva kit. If low use a transdermal cream or gel, or sublingual estriol, but never oral estriol salts.

Both men and women should test their testosterone levels for many reasons. Please read Chapter 7: Cardiovascular Health in my book, *Testosterone Is Your Friend*. Women may be normal, deficient, or excessive in testosterone, while men can only be normal or deficient. Testosterone deficiency is a very important influence in heart and circulatory disease. Men have about ten times the amount of testosterone in their blood than women do. If a woman is excessive she can only lower testosterone levels by diet and lifestyle changes; there are no magic supplements to lower it. Men and women with tested low testosterone levels can

use natural prescription testosterone gels or creams (not testosterone salts such as propionate or enanthate, and certainly not methyl testosterone) to raise their levels. Men who are low need about 3 mg daily and women about 150-300 mcg in their blood. Never use testosterone unless you have tested yourself and proven you are deficient. The ideal is a youthful level as you had at, say, the age of 30.

DHEA falls in both men and women generally over the age of 40 and is a vital hormone for heart and circulatory health. Sometimes, however, women can be excessive while men are rarely excessive. You must test your levels of either free DHEA or DHEA-S (DHEA sulfate). Never use DHEA unless you have tested your levels with either blood or saliva and proven you are low. If you are too high only diet and lifestyle changes will lower your levels. There are, again, no magic supplements to help you. Men have about twice as much DHEA as women, so women with low levels can try 12.5 mg (half tablets) and men 25 mg daily. DHEA is known as the life extension hormone for good reason, and many books have been written on it as have thousands of clinical studies worldwide. At University of California in San Diego an excellent study concluded, “DHEA concentration is independently and inversely related to death from any cause and death from cardiovascular disease in men over 50.” There are many benefits to keeping a youthful DHEA level throughout life. At Saga Medical School in Japan they found, “higher levels of DHEA are related to the favorable lipid and lipoprotein levels in men.” What about women? At Medical University Hospital in Germany the doctors said, “Treatment with DHEA raised the initially low serum concentrations of DHEA, testosterone, and androstenedione into the normal range; serum concentrations of SHBG and total cholesterol decreased significantly.” At Gifu University in Japan they concluded, “These data suggest favorable effect of DHEA on lipid profile in Japanese postmenopausal women.”

Progesterone is thought of as a female hormone, but it is important for both men and women. Progesterone is important for the metabolism of cholesterol. Never use synthetic prescription progestins, which have many negative side effects and do not have the benefits of real human progesterone. Use natural USP transdermal progesterone with 800-1000 mg per two ounce jar.

Avoid anything with “yam extract” or “wild yam” on the label as they are ineffective and are known as “yam scam” in the trade. Progesterone is the natural antagonist to excessive estrogen levels and is very safe and very non-toxic. Both premenopausal women and post-menopausal women may well benefit from using transdermal natural progesterone and many books have been written on this by such authors as John Lee, Raquel Martin, Anna Rushton, Marla Ahlgrimm, Sherrill Sellman, Marcus Laux and others. Men over fifty can use smaller amounts to protect against estrogen levels that actually exceed that of women of the same age.

You may have never even heard of pregnenolone, but it is the grandmother hormone from which all our other sex hormones are derived. It is considered the most potent memory and brain hormone known. This is very important to avoid senility, memory loss and Alzheimer’s as we age. Take 100 mg of phosphatidyl serine (PS) and 500 mg of acetyl-L-carnitine (ALC) for even better results. It falls after the age of 40 in both men and women strongly and then stabilizes. Dosages of 25 mg a day for women, and 50 mg a day for men would be reasonable. You can saliva test your levels or see a doctor for a blood draw. Very little is known about the effects of pregnenolone on our blood lipids, but it is critical to balance all our hormones together. Pregnenolone replacement will become much more common as more studies are done and more is known about it. Common logic tells you to keep your pregnenolone at youthful levels throughout life especially as the actions of our other hormones depend on its actions.

Melatonin is a powerful and miraculous hormone that we are just beginning to understand just how vital it is for our health and well being. It is our anti-aging hormone and decreases from the time we are teenagers until it almost disappears by the time we reach the age of 80. Only recently have studies come to light that show melatonin is vital in the metabolism of cholesterol and triglycerides. This is unknown either to the medical profession or the general public. Studies from the University of Tokyo, University of Seville, Al-Azhar University in Egypt, and Hong Kong Polytechnic University that show how vital melatonin is to cholesterol metabolism. To quote one of them, “melatonin also induced a marked protection in terms of decreasing serum

cholesterol, LDL and triglycerides while HDL was increased by 56%…" Melatonin, secreted by the pineal gland, is the most important anti-aging hormonal factor we know of. You must test this at 3:00 AM by itself with saliva, as melatonin is highest at night when we sleep. If you are over 40 try 3 mg and *take it only at night* and never during the day. This is a very safe and very non-toxic supplement and a vital part of your supplement program for many, many reasons. Read one of the many books that have been written about it for more information.

Thyroid metabolism is most important for cholesterol levels. You must test your free T3 and free T4 and not your TSH or T3 uptake. Look for midrange levels and do not accept low normal ones. Synthroid (L-thyroxine) and Cytomel (triiodo-thyronine) are bioidentical to our own thyroid hormones. If your T3 or T4 level is too high only diet and lifetstyle will lower it; do not let the doctors butcher or irradiate your thyroid gland. The best study was from University Hospital in Venezuala where they found 10% of patients with hyperlipidemia were hypothyroid. A review from the University of Nebraska found T4 replacement therapy effectively lowers total cholesterol levels.

Insulin levels per se do not need to be tested, but rather insulin resistance. This is done with a glucose tolerance or GTT test. You drink a cup of glucose solution and wait one hour to get your blood glucose measured to see how well your insulin responds. Poor response is called "insulin resistance". Blood sugar dysmetabolism, especially diabetes, is closely related to blood lipid conditions. Hyperlididemia is a hallmark of the metabolic syndrome.

Growth hormone is a very important factor in blood fat levels and growth hormone falls steeply as we age. You can special order a blood test through your doctor, but the level varies so much during the day this is not sufficient. Testing IGF-1 levels does *not* work. If you are over the age of 50 you can bet your GH level is low. Only real, prescription rhGH (recombinant human growth hormone) works. Research shows all the non-prescription supplements out there that claim to raise growth hormone (no matter how well advertised) are ineffective promotions. *Lifestyle* keeps your growth hormone level high - exercise, staying slim,

eating less, eating well, fasting regularly, not drinking or smoking-just healthy living generally. You can take a supplement of one gram of L-glutamine in the AM and one gram in the PM to help spike your levels. L-glutamine has very beneficial effects on your intestines as well and is safe and inexpensive. You can now buy Chinese Jintropin® legally on the Internet without a prescription for your own use under section 21 of the U.S. Code for about $100 a month. You can use 1 IU daily sublingually dissolved in DMSO instead of injecting it. The overwhelming research on using rhGH in the elderly consistently shows dramatic improvements in lowering cholesterol and triglyerides levels, as well as raising HDL and lowering LDL. At the world famous NIH in Maryland they concluded, “Thus, endogenous nocturnal GH secretion predicts total, LDL, and HDL levels independently…” Aarhus University Hospital in Denmark found, “GH status is an independent determinant of serum levels of cholesterol and triglycerides in healthy adults”.

We must mention cortisol, the “stress hormone”. There is almost no information available on cortisol and blood lipids. The Western Infirmary in Scotland proved that cortisol is intergral to cholesterol metabolism in both men and women. High cortisol levels are epidemic in Western societies due to stress, poor diet, and negative lifestyle factors. You can only lower cortisol levels by better food choices, exercise, supplements, general hormone balance and positive lifestyle changes. A few people are deficient in cortisol due to adrenal exhaustion, and may benefit from low dose oral hydrocortisone (the pharmaceutical name for cortisol) therapy.

The next chapter on Home Hormone Testing will tell you how to test most your levels at home with saliva samples accurately and inexpensively without a doctor.

Chapter 16: Home Hormone Testing

Medical doctors almost never test their patients for basic hormone levels as part of their therapy regardless of their condition. In the last chapter you saw how critical hormone levels are for your blood lipid levels. Have you ever had a doctor suggest you test your hormone levels for ANY condition? Most all doctors, including endocrinologists, have very little knowledge of hormones, how to test them, and how to supplement low levels. Don't waste your money on testing bound levels of hormones. If you choose to have a doctor test your hormone levels, this means multiple blood draws, an expensive office visit, and $100 to $200 per hormone. You still might get back results for bound, unavailable sex hormones that tell you almost nothing.

Proteins in our bloodstream called SHBG (sex hormone binding globulins) attach themselves to most of our sex hormones making them biologically unavailable. For example, testosterone is usually about 98% bound with about 2% free usable testosterone that actually affects our biological processes.

For about twenty years now researchers in clinics have been able to accurately measure hormone levels using saliva samples rather than blood. These samples were often used in Third World countries and in the field due to the lack of available refrigeration for blood samples. The World Health Organization approved this method in the 1990's due to its practicality, accuracy, reliability and inexpensiveness. Finally in the late 1990's this became available to the general public. You can now buy saliva test kits for estradiol, estrone, estriol, testosterone, androstenedione, DHEA, pregnenolone, cortisol, melatonin, and progesterone among others. You still have to see a doctor to test your insulin, thyroid hormones (T3 and T4) and growth hormone (GH). California and New York have banned this due to pressure from the medical profession. If you live in these states simply use a return address for a friend or relative in another state.

This is a tremendous technological breakthrough in both traditional and holistic medicine, yet very few people and very few

doctors are even aware of it. People don't even know where to buy the saliva test kits. No matter what your condition you should know your basic hormone levels. Raise those which are low and lower those which are excessive. Keeping youthful levels of testosterone, melatonin, progesterone, pregnenolone, T3/T4, DHEA, and growth hormone will add years to your life and life to your years. Even many life extension advocates that promote the use of these hormones don't understand you must test your levels before using them. Almost no one knows what their basic hormone levels are, so they will never enjoy optimal health and lifespan.

You can contact the following companies:

Aeron LifeCycles Laboratories
1933 Davis Street #310
San Leandro, CA 94577
(800) 631-7900 www.aeron.com

Great Smokies Diagnositic Laboratory
63 Zillicoa Street
Asheville, NC 28801
(800) 522-4762 www.gsdl.com

ZRT Labs
1815 N.W. 169th Place #5050
Beaverton, OR 97006
(503) 466-2445 www.salivatest.com

Life-Flo Laboratories
11202 N. 24th Avenue
Phoenix, AZ 85029
(888) 999-7440 www.life-flo.com

These labs generally offer kits testing from 1-4 hormones at about $30-$50 each. Melatonin has to be ordered separately and tested at 3:00 AM. Vegetarians (and fish eaters) will have lower levels of sex hormones generally. Currently, none of the saliva labs will test T3/T4, insulin, or growth hormone. Time of day is very important for when the sample is taken. Take your sample

at the same time every morning (e.g. 8:00 AM) for consistency in testing.

Other Books by Safe Goods

Testosterone is your Friend – Roger Mason	$ 8.95 US $12.95 CAN
The Natural Prostate Cure – Roger Mason	$ 6.95 US $10.95 CAN
Macrobiotics for Americans – Roger Mason	$ 7.95 US $11.95 CAN
Minerals You Need – Roger Mason	$ 4.95 US $ 6.95 CAN
What is Beta Glucan – Roger Mason	$ 4.95 US $ 6.95 CAN
No More Horse Estrogen – Roger Mason	$ 7.95 US $11.95 CAN
The Natural Diabetes Cure – Roger Mason (summer 2005)	$ 7.95 US $11.95 CAN
Eye Care Naturally	$ 8.95 US $12.95 CAN
Cancer Disarmed Expanded	$ 7.95 US $ 11.95 CAN
Overcoming Senior Moments	$ 7.95 US $11.95 CAN
Live Disease Free	$ 9.95 US $14.95 CAN
Atlantis Today – The USA	$ 9.95 US $14.95 CAN
2012 Airborne Prophesy	$16.95 US $23.95 CAN
Kids First – Health with No Interference	$12.95 US $19.95 CAN
Analyzing Sports Drinks	$ 4.95 US $ 6.95 CAN
The ADD and ADHD Diet	$ 9.95 US $14.95 CAN
ADD, The Natural Approach	$ 4.95 US $ 6.95 CAN

For a complete listing of books visit our web site:

AUTHOR:
Roger Mason

(Picture)

Roger Mason is an internationally known research chemist, who studies natural products, life extension, and natural cures for illness. He writes unique books on his findings. Roger appears daily on national radio shows

advocating natural health. He lives with his wife in Wilmington, NC.

“Lower Cholesterol Without Drugs” tells you all you need to know about diet, supplements and hormones to naturally and effectively lower your cholesterol and triglycerides.

- **Cholesterol lowering foods to eat**
- **Important lifestyle factors**
- **Powerful supplements to take**
- **Over-the-counter hormones to use**
- **Solutions for genetically high cholesterol**

Based on fifteen years of international published medical research.

Bar code

$ 6.95 US
$10.95 CAN