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LOWERING YOUR CHOLESTROL

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INTRODUCTION

Cholesterol has been around for thousands of years. It's a

natural function of the human body. The modern story of cholesterol and how it affects us today, actually began during a government study in 1951.

The Pentagon sent pathologists to Korea to examine the bodies of servicemen who lost their lives during the war. Autopsies were conducted on 2,000 soldiers.

The results were astounding to the medical community of that time. Normally, no one under 35 dies of coronary heart disease. Remember, this was 1951!

More than 75 percent of the soldier had yellow deposits of atherosclerotic plaque on their artery walls. The average age of these soldiers was 21 contradicting the assumption that such artery clogging deposits were only prevalent in older men.

The results of the Army pathologists rocked the medical community. Prior to these autopsies, doctors had no idea how early the process of heart disease began.

Not long after this discovery, a name was given to the major contributor to the buildup of plaque and to heart disease risk – cholesterol. More recent studies have shown that for every 1 percent drop in cholesterol levels, there is a 2 percent decrease in the risk of a heart attack.

Since those original studies, the risk of heart disease stemming

from cholesterol has exploded. In 2002 it was estimated that 107 million American adults now have a blood cholesterol level high enough to require medical advice. Unfortunately, the numbers keep rising.

Despite this epidemic problem, there is good news. You can do something about the problem and that's what this guide is all about. In plain English, we will take a laymen's look at cholesterol, the causes, effects and what you can do to reverse the negative impact it has on your personal health.

WHAT IS CHOLESTROL?

As mentioned above, cholesterol in and of itself, is a natural function of the human body. Every living being requires a certain amount of fat to exist. Like everything in nature, it only becomes a problem when there is an imbalance.

The processing of fat begins when it gets absorbed in the intestines. From there it heads to the liver. The fat requires a delivery system to the rest of the body to be used immediately but also to be stored in fat cells for future use.

In order for the fat to enter the delivery system, while it is in the liver it is split into two different types of fat, cholesterol and triglycerides.

Once this transformation takes place, the two types of fat (cholesterol and triglycerides) are packed into vehicles for carrying the fat to the fat cells throughout the body using the bloodstream. These vehicles are called lipoproteins.

There are three types of lipoproteins:

1. Very Low Density Lipoproteins (VLDL)
2. Low Density Lipoproteins (LDL)
3. High Density Lipoproteins (HDL)

Under normal circumstances, the bloodstream does a very efficient job of carrying the LDL and HDL Lipoproteins throughout the body.

Cholesterol is a waxy, fat like substance that presents itself naturally in cell walls and membranes everywhere in your body. Your body uses cholesterol to produce many hormones. It also uses it to produce vitamin D and the bile acids that help to digest fat.

Where problems arise is when there is an over abundance of cholesterol in your bloodstream. The cholesterol deposited by the LDL leads to a narrowing of the blood vessels.

If this occurs, the excess can be deposited in the arteries of the heart which could result in stroke or heart disease. This is called atherosclerosis. This is why LDL is known as "bad cholesterol."

HDL usually collects the bad cholesterol and takes it back to the

liver. That's why HDL is known as "good cholesterol."

Cholesterol is not the only cause of heart disease, but it is a contributing factor. Here's how it works.

Cholesterol can only attach to the inner lining of the artery if it has been damaged.

Once the lining of the artery is damaged, white blood cells rush to the site followed by cholesterol, calcium and cellular debris. The muscle cells around the artery are altered and also accumulate cholesterol.

The fatty streaks in the arteries continue to develop and bulge into the arteries. This cholesterol "bulge" is then covered by a scar that produces a hard coat or shell over the cholesterol and cell mixture. It is this collection of cholesterol that is then covered by a scar that is called "plaque."

The buildup of plaque narrows the space in the arteries through which blood can flow, decreasing the supply of oxygen and nutrients. This cuts down the supply of blood and oxygen to the tissues that are fed by that blood vessel.

The elasticity of the blood vessel is reduced and the arteries' ability to control blood pressure is compromised. If there is not enough oxygen carrying blood passing through the narrowed arteries, the heart may give you a pain that is called angina.

The pain usually happens when you exercise because at that time your heart requires more oxygen. Usually it is felt in the chest or the left arm and shoulder, although it can happen without any symptoms at all.

Plaque can vary in size as well as shape. All through the coronary arteries you can find many small plaques that cover less than half of an artery opening. Some of these plaques are completely invisible in the tests that doctors use to identify heart disease.

The medical community used to think that the primary concern was the larger plaques. They thought these posed a greater threat because of their size and that they were more likely to cause a complete blockage of the coronary arteries.

While it is true that the larger plaques are more likely to cause angina, it is the smaller plaques that are packed with cholesterol and covered by scars that are more dangerous. They are considered unstable and prone to ruptures or bursting releasing their load of cholesterol into the bloodstream. This causes immediate clotting within the artery. If the blood clot blocks the artery totally, it will stop the blood flow and a heart attack occurs.

The muscle on the farther side of the occurring clot fails to get the oxygen it needs and begins to die. This kind of damage can be permanent.

DIAGNOSING CHOLESTEROL

Unfortunately, most people aren't even aware they have atherosclerosis until they have a heart attack or stroke. It is possible to have up to 80 percent closure of the arteries without ever feeling a single symptom!

Most people begin to develop cholesterol driven atherosclerosis as children and it's unusual if you find an adult in the United States who does not have some degree of atherosclerosis.

Diagnosing cholesterol levels require a simple blood test to determine the levels of LDL and HDL. Cholesterol tests can be tricky, however. Simple screening that is done without "fasting," measures only the total cholesterol and the HDL, the "good" cholesterol. It will give you a ballpark figure, but far from accurate.

The complete test is called a "lipid profile," and even that can vary from test to test. This test will measure total cholesterol, HDL, LDL and triglycerides.

For truly accurate numbers, you should not eat, or drink anything other than water for 12 hours before testing. Vigorous exercise should be avoided for 24 hours before testing and you need to make certain that whoever tests you is made aware of any medications

you may be taking as they will also affect the results.

Okay, now that you have accurate numbers, what do they mean? Before we discuss the numbers and their meanings, we need to clarify some terminology.

Dietary cholesterol means the cholesterol that you eat. The American Heart Association recommends no more than 300 milligram per day. Most food labels in the United States list cholesterol. The three terms, blood cholesterol, serum cholesterol and total cholesterol mean the same thing – the total cholesterol in your body. This is what is measured when you have a cholesterol test.

Your test results will come in with three numbers:

1. HDL Cholesterol
2. LDL Cholesterol
3. Total Cholesterol

For total cholesterol the National Cholesterol Education Program classifies levels below 200 milligrams/dl (milligrams per deciliter) as “desirable.” A level between 200 and 239 is “borderline high.” Anything over 240 is “high.”

Triglyceride levels over 400 milligrams/dl are considered “high” and levels over 1,000 milligrams/dl are considered “very high.”

For LDL, the desirable level is less than 130 milligrams/dl. The “borderline high” level is 130 to 159. the “high risk” level is 160 and

above.

Higher is better for HDL. For HDL, the numbers are lower because there is less HDL in the blood. Anything lower than 35 milligrams/dl is considered "high risk." If your HDL is very high, say over 60, your risk of heart disease is reduced.

The LDL, however, is the "bad" cholesterol and the most important factor in predicting heart attack. For LDL, lower is better preferably less than 160. It's best to keep the level around 130.

CAUSES

If you recall, we mentioned that cholesterol can only attach to the inner lining of the artery if it has been damaged. How does that damage occur?

Evidence points to "free radical" damage as being one of the culprits of arterial wall damage. Free radicals are found all around us. They are highly reactive substances like polluted air, radiation, tobacco smoke, herbicides, and naturally within our own bodies as an offshoot of regular metabolic processes.

Free radicals attack and damage cells altering normal cell activity. You see it around you every day causing metal to rust and fruit to spoil. This is why we take anti-oxidants like vitamins C, E,

beta-carotene and selenium, to combat the attack of free radicals.

Heredity plays a role in high cholesterol. Your genes can influence your LDL by affecting how fast it is made and removed from your blood. There is one particular form of inherited high cholesterol that will often lead to early heart disease. It is called familial "hypercholesterolemia" and can play a role in 1 of 500 people.

Weight is a factor in determining your LDL. If you have a high LDL level and are overweight, losing those pounds may help you to lower it. Additionally, losing weight also helps to lower triglycerides and raise your HDL.

Age and sex should be considered as well. Women, before menopause, usually have total cholesterol levels that are lower than men. This changes as men and women age. Levels will rise until reaching age 60 to 65. For women, menopause can cause an increase in LDL and a decrease in HDL. After the age of 50 women often have higher total cholesterol levels than men of the same age.

Alcohol plays an odd role in cholesterol levels. It increases HDL but at the same time it does not lower LDL. The medical community does not know for certain whether alcohol reduces the risk of heart disease. We know that too much alcohol can damage the liver and heart muscle, lead to high blood pressure and raise triglycerides. There are just too many other risks to even consider the use of

alcoholic beverages used as a way to prevent heart disease just because it increased the HDL.

Stress and personality may contribute to heart disease. Associating a certain type of personality and heart disease has been suggested for many years. This goes back to the "Type A" and "Type B" personality study conducted in 1959.

Type A behavior generally manifests in a chronic sense of time, urgency, aggressiveness and striving for achievement. Type A people will drive themselves to meet specific deadlines which are most often self-imposed.

They have feelings of being constantly under pressure and often multi-task to the point of doing two or three things at one time. To say that Type A people are "driven" is an understatement. They consider themselves indispensable. All of these traits add up to a state of constant stress

Over the long term, stress has shown to raise blood cholesterol levels. The way it does this is by affecting habits. An example is over indulging in fatty foods as a way of consoling themselves when people are under stress. The saturated fat and cholesterol in these foods contribute to high levels of blood cholesterol. We will explore dietary factors in a later chapter.

Type B behavior is characterized by just the opposite set of

traits. Type B people are less preoccupied with achievement, less rushed and generally more easygoing people.

They don't allow themselves to be rushed nor have any particular pressure regarding deadlines. They are less prone to angry outbursts and seem to be better equipped to making distinctions between work and play.

Studies completed over a period of eighteen months to two years with a group of both Type A and Type B people, indicated that Type A participants had a 31 percent increased risk of developing heart disease.

This was further substantiated by the discovery of more deposits of plaque in the coronary arteries of Type A people. Type A behavior also appears to show an association with other risk factors like smoking, higher fat levels, increased secretion of adrenaline. All of which increases the oxygen requirement of the heart muscles and releasing fatty acids from the body fat.

It is important to note that there are not two different types of people. Each person is an individual and sorting them into specific categories do not properly identify them.

CHOLESTEROL MEDICATIONS

We will review the different types of medications available for the treatment of high cholesterol as well as natural remedies. Your doctor may decide that you need help in controlling your cholesterol if you are not able to reduce it using natural treatments.

Even if your doctor prescribes any of these medications, you must still follow through with healthy lifestyle treatments that we will discuss further on.

There are several different types of medications used to lower cholesterol. They are called statins, bile acid sequestrants, cholesterol absorption inhibitors, nicotinic acid agents and fibrates and we will review them one by one.

Statins

What are they and how do they work? Statins repress the enzyme HMG-CoA reductase. This enzyme controls the rate that cholesterol produces itself in the body. These drugs can lower cholesterol from 20 to 60%. They slow the production while they increase the liver's ability to withdraw LDL. Statins lower the LDL levels better than any other type of drug.

They can also produce a modest increase of HDL while decreasing total cholesterol and triglycerides. Positive results are usually seen after just 4 to 6 weeks of beginning the medication.

Overall statins are proven for lowering heart attack risks, strokes and other coronary diseases related to high cholesterol levels. You should not take statins if:

You are allergic to statins themselves or their ingredients

You are pregnant or breastfeeding

You have liver disease

You consume excessive amounts of alcohol

Have a history of myopathy

Have renal failure

Brand names of statins that you might recognize are Lipitor, Lescol, Mevacor, Altacor, Pravahol, Zocor and Crestor.

There are some drug and/or food interactions that you should be aware of. More than one quart of grapefruit juice per day can decrease the ability of the liver to process some statins. More importantly there may be other medications that can interact and cause serious side effects. It's important to let your doctor know about any other medication you are taking, whether prescription or non-prescription including vitamins, herbal supplements, medication for the immune system, other cholesterol drugs, medication for infections, birth control pills, medication for heart failure, HIV or AIDs, or Coumadin.

Side effects from statins are rare. If you experience muscle

soreness, pain, weakness, vomiting, stomach pain, discolored urine, stop taking the medication and contact your doctor immediately.

Bile Acid Sequestrants

Bile acid sequestrants bind with bile acids that contain cholesterol in the intestines and are then eliminated in the stool. They are proven to reduce LDL by 10 to 20%. Small doses produce decent reductions in LDL. They are sometimes prescribed along with a statin to enhance reduction. When combined, their effects are counted together and lower LDL by more than 40%. They do not lower triglycerides.

People who are allergic to bile acid sequestrants should not take this medication nor should anyone who has a medical history of bile obstruction.

There may be interactions with other drugs so make certain your doctor has a complete list of all prescribed and non-prescribed medications you are taking.

Bile acid sequestrants do not become absorbed from the gastrointestinal tract. It has been used for 30+ years and is considered safe for long term use.

Cholesterol Absorption Inhibitors

A newer drug class, Zetia is a cholesterol absorption inhibitor that was approved in 2002 by the FDA. By itself it reduces LDL by 18

to 20%/ It does this by decreasing absorption of cholesterol and other drugs within this class also mildly lower triglycerides.

Very useful for prescribing to people who cannot take statins or as another drug that can be taken if those who take statins have side effects if the statin dose is increased. Adding a cholesterol inhibitor to a statin increased the lowering effect by a 2 to 3 fold factor.

There may be interactions with other drugs so make certain your doctor has a complete list of all prescribed and non-prescribed medications you are taking.

Nicotinic Acid Agents

Niacin, Niacor and Slo-Niacin are common names for nicotinic acid agents.

Nicotinic acid, which is also called niacin, is a water soluble vitamin B. It improves levels of all lipoproteins when the doses are given far above the vitamin requirement.

Nicotinic acid reduces total cholesterol, LDL and triglycerides at the same time raising HDL. It reduces LDL by 10 to 20%, triglycerides by 20 to 50% and raises HDL by 15 to 35%. Nicotinamide is a niacin by product after the body breaks it down. Nicotinamide has no effect in lowering cholesterol and should not be used in place of nicotinic acid.

Individuals who are allergic to nicotinic acid, and those who have

liver disease, active peptic ulcer, or arterial bleeding, should not use nicotinic acid agents.

There are two types of nicotinic acid. One for immediate release and one for extended release. Immediate release is inexpensive and widely available without a prescription. However, because of potential side effects it must not be used for lowering cholesterol without being monitored by a doctor.

Niacin that is extended release is often tolerated better than crystalline niacin. But has a greater chance of causing damage to the liver.

If you are taking medication for high blood pressure, the results may be increased while taking niacin. You should have a system available to monitor your blood pressure when beginning a new niacin regimen.

Again, there may be side effects when mixed with other medications or foods. Discuss with your doctor and make certain you make him aware of all medications prescribed or otherwise.

Fibrates

Primary effectiveness is lowering triglycerides. There is a lesser effect in increasing HDL levels.

Some serious side effects may occur so be sure and discuss these with your doctor. If you are allergic to fibrates or have liver

disease or kidney disease, you should not take these agents.

NATURAL TREATMENTS

No medications can do a better job than treating your high cholesterol naturally. And, if you are one of those lucky people who do not have cholesterol concerns, you may want to take steps to keep it that way!

What can you do to improve your cholesterol levels? Here's the list and we will cover each item thoroughly.

Reduce fat in your diet

One of the best plans is covered previously in our chart on saturated fat. But there is more you can do. Buy the leanest cuts of meat you can find. Regularly substitute poultry (without the skin) and fish for red meat. Both are lower in saturated fat. Switch to low fat cottage cheese and yogurt, reduced fat hard cheeses and skim or 1 percent milk.

Eat no more than four egg yolks a week

Many people don't have to worry about eating cholesterol. Normal bodies adjust to increased intake by cutting back on regular product. However, since one third of Americans are cholesterol responders their blood cholesterol does go up when they eat

cholesterol. You probably don't know if you fall into this category so play it safe. Eat no more than four egg yolks a week. An average egg yolk contains 213 milligrams of cholesterol!

Eliminate fried foods

Buying low fat is just the beginning. You need to institute low fat cooking methods to keep the cholesterol from sneaking back in to your diet.

Remove fatty skin from chicken and turkey.

Don't fry foods. Roast, bake, broil, grill or poach them instead.

Use fat free marinades or basting with liquids like wine, tomato or lemon juice.

Use olive or canola oils for sautéing or baking. Both are very low in saturated fat.

Use diet, tub or squeeze margarines instead of regular. Watch for the term "hydrogenated," which means some of the fat is saturated.

Eat vegetables and complex carbohydrates

Lowest fat foods of all are vegetables, fruits, grains (rice, barley and pasta), beans and legumes. Try substituting some of these for meat and high fat dairy products.

Don't douse your pasta with butter or your potato with sour cream.

Use tomato base sauces instead of cream base.

Use lemon juice, low sodium soy sauce or herbs to season vegetables.

Make chili with extra beans and seasonings while leaving out the meat.

Lose weight

If you are overweight, the chances are almost 100% that you have a problem with high cholesterol. You can lower your LDL and elevate your HDL just by dropping some pounds. Eat fewer fatty foods and more fruits, vegetables, grains and beans and it's a pretty good bet that you will slowly but surely lose weight.

Include your family

Eating habits carry through to adulthood. Get your children on a healthy eating pattern early. Don't begin until they are at least 2 years of age, however. Babies need extra fat calories to develop properly.

Snack all you want

Yep, that's what we wrote. Snack several times a day on low fat foods. Yogurt, fruit, vegetables, bagels and whole grain breads and cereals are excellent for snacking. In fact, there is evidence that points to lower cholesterol levels in people who eat several small meals a day. Eating often can keep hormones like insulin from rising and

signaling your body to make more cholesterol. Make certain that your total intake of calories doesn't go up when you eat more often.

Nuts to you!

Do you like nuts? If you do, sprinkle a few on your cereal, bake them into muffins or pancakes or add them to casseroles or stir-fries. Walnuts and almonds are especially good. Eating about three ounces of walnuts a day is shown to decrease blood cholesterol levels by 10% more than an already low fat, low cholesterol diet. Walnuts are high in fat, but it is mostly polyunsaturated fat, which is the kind that lowers cholesterol. Another study shows that about three ounces of almonds which are rich in monounsaturated fat, lowers LDL by 9%!

Eat chocolate

Aha! All you chocoholics rejoice! Studies indicate that the fat in chocolate is stearic acid and has no effect on cholesterol levels. The chocolate does not increase LDL and could raise HDL a wee bit. But chocolate is still high in fat and calories so don't go overboard.

Drink fruit juices

You may have read about the low rate of heart disease in France. It led researchers to believe that the French habit of drinking red wine with meals contributes to this. Apparently some of the non-alcoholic ingredients in red wine raises HDL and suppresses the body from producing LDL.

Purple grape juice works the same way. It will work like red wine to lower the fat level in your blood. The LDL lowering effect of red wine and grape juice comes from a compound that grapes produce normally to resist mold. The darker the grape juice, the better.

Grapefruit juice does the same thing and it may also help your body get rid of that nasty plaque that we discussed earlier.

Eat garlic

Cholesterol lowering effects of garlic have been demonstrated repeatedly in people with normal and high cholesterol. Eat all the garlic you can. It also seems to raise the HDL levels as well. If you are worried about the odor, take the tablets instead. They have proven to be nearly as effective as the cooked or raw cloves.

Take niacin – carefully

We discussed niacin earlier. Remember as one of the B vitamins, it is proven effective for lowering LDL and raising HDL. It is also one of the cheapest drugs available for lowering cholesterol. But, without medical supervision it may not be totally safe. A dose high enough to lower cholesterol can cause extremely high blood sugar or liver damage.

Take vitamin E

Studies indicate that vitamin E may have a positive impact on lowering cholesterol when taken in fairly large quantities – up to 800

IU per day. This is more than you can get from your diet alone. Larger amounts do not seem to cause any harm. Further studies showed that even amounts of just 25 IU per day helps in preventing LDL from sticking to blood vessel walls. That amount is only slightly higher than the recommended daily amount (RDA) of 12 to 15 IU. It's interesting to note that even that small amount has an impact on preventing that hardening of the arteries.

Take Calcium

One study indicates that when 56 people took a calcium carbonate supplement, their total cholesterol went down 4 percent and their HDL increased 4 percent. That was taking a dosage of 400 milligrams of calcium three times a day with no harmful effects reported. That does refer to calcium carbonate.

Take a multivitamin – it can't hurt

While you are building your calcium and vitamin E intake, remember the old standby, vitamin C. It is the number one immune system booster and also drives up HDL. A study of people who took more than 60 milligrams of vitamin C per day (60 milligrams is the RDA) had highest LDL levels.

Fill up on fiber

Remember several years back when oat bran was the latest craze for lowering cholesterol? Later studies arrived at inconsistent

results, but the medical community do agree that soluble fiber, the kind found in oat bran, does help lower LDL and raise HDL. As little as three grams per day of fiber from oat bran or oatmeal can be effective. There are 7.2 grams of soluble fiber per 100 grams of dry oat bran and five grams of soluble fiber per 100 grams of dry oatmeal. There are other sources of fiber as well such as barley, beans, peas and many other vegetables. Corn fiber is also good for reducing LDL, lowering it by as much as 5 percent in a recent study. Researchers used 20 grams of corn fiber a day. That would be a bit difficult for the average user when you take into account that one serving of corn has three grams of corn fiber. But, every little bit does make a difference. Pectin, which is found in fruits like apples and prunes, reduces cholesterol even better than oat bran, as does psyllium which is the fiber you find in many breakfast cereals and bulk laxatives.

Quit smoking

Smoking promotes the development of atherosclerosis. Tobacco smoke is actually more damaging to the heart than the lungs. Smokers have a higher chance of having a heart attack (three times greater than nonsmokers) and a greater risk of dying of the attack (twenty one times greater than nonsmokers.) Tobacco smoke contains carbon monoxide, which is uniquely damaging to the heart. Not only does it reduce the amount of oxygen the heart receives, it

also actually damages the cells of the heart, rendering them less able to produce energy and thereby weakening the heart. In addition to the dangers of carbon monoxide, there's the danger of the nicotine. Nicotine interferes with the electrical impulses that cause the heart to beat. When the blood flow is compromised, the heart can beat in a fast, uncontrolled, irregular beats that actually cause a heart attack. If you smoke, reducing the risks of atherosclerosis is yet another reason to stop. Even if you have smoked for years, stopping now can still immediately help combat the development of atherosclerosis.

Reduce sugar intake

Many people don't realize that sugar affects cholesterol and definitely affects triglycerides. Sugar stimulates insulin production, which in turn increases triglycerides. Men in particular, seem to be sensitive to this effect from sugar. The mineral chromium which helps to stabilize blood sugar, can also raise the level of HDL. 100 mcg of chromium three times daily can help to improve your cholesterol levels.

Eliminate alcohol

The jury is still out and the different schools of thought are still at odds regarding the benefit or lack of benefit to consuming alcohol. This suggestion has nothing to do with our previous discuss on red wine. A moderate amount may be helpful. The problem is that to one

person a moderate amount might be a glass of wine with their meal, while to another it might be a half bottle of Scotch! Anything above the arbitrary "moderate" amount elevates serum cholesterol triglycerides and your uric acid levels as well as potentially increasing blood pressure all of which promote heart disease. So, the best bet would be to eliminate it totally.

Exercise regularly

There is positive evidence that exercise can lower LDL cholesterol and boost HDL cholesterol. Both aerobic exercise such as walking, jogging, swimming, bicycling and cross country skiing and strength training like lifting weights or using weight machines all promote the improvement of cholesterol levels. An analysis of 11 studies on weight training showed that this exercise lowered LDL by 13 percent and raised HDL by 5 percent. If you lift weights, use light to moderate weights and do many repetitions.

Eliminate caffeine

We Americans definitely have a love affair with our coffee! People who drink large amounts of caffeine (more than 6 cups a day) are far more prone to elevated cholesterol. That connection does not hold for tea drinkers. Limit your coffee intake to no more than one cup a day and eliminate caffeinated sodas entirely.

LIVING HEALTHY

Unfortunately, the medical community is quick to prescribe another expensive medication to lower cholesterol but they are far less likely to suggest herbal or homeopathic measures.

Along with getting plenty of fiber there are foods that will help in promoting the lowering of cholesterol as well as herbs that can further reduce cholesterol.

Foods containing pectin are advantageous to lowering cholesterol levels. Carrots, apples and the white layer inside of citrus rinds are particularly beneficial.

Avocado, which is very high in fat, has unexpectedly become a cholesterol reducer. A study of women who were given a choice of a high monounsaturated fats (olive oil) along with avocado diet or a complex carbohydrate consisting of starches and sugars reported interesting results. In six weeks, the former group on the olive oil and avocado diet showed an 8.2 percent reduction in cholesterol.

Beans. Gotta love `em. They are high in fiber and low in cholesterol. What more could you ask for! A cup and a half of beans, or the amount in a bowl of soup, can lower total cholesterol levels by as much as 19 percent!

Garlic. We discussed garlic earlier but it is well worth repeating

here. Use it liberally in your diet. Not only will it help to lower your cholesterol it is also credited with lowering blood pressure. Be sure you include generous amounts of garlic as well as onions in your daily diet.

Cayenne pepper (*Capsicum minimum*) and other plants that contain the phenolic compound capsaicin have a well demonstrated effect in lowering blood cholesterol levels, as does the widely used spice Fenugreek.

Caraway is another aromatic spice with demonstrable cholesterol lowering properties.

A whole range of Asian herbal remedies new to western medicine are proving to be valuable in this field.

Remember when the “low-fat” mantra began? We all jumped in with both feet and some of us still live on low fat foods, like having a baked potato but no butter or sour cream. Maybe you eat pasta, veggies and fat free desserts. So how come you still gain weight?

Good question. Researchers from the National Center for Health Statistics studied the eating habits of 8,260 adult Americans between 1988 and 1991. They found that Americans have significantly reduced their fat intake but still packed on extra pounds in recent years.

In fact, a national health and nutrition survey of over 8,000 American adults concludes that one third of the population is

overweight.

The answer is very simple and right in front of us. So many of us jumped on the low fat diet and assumed that if it's low fat it can't make us fat. Right? Wrong. We were so involved with the low fat concept that we forgot to count calories!

If you are eating more calories than your body needs, whether from fat or carbohydrates, the body will store them as fat. Period. According to a National Institutes of Health study, by 1990 the average American was consuming hundreds more calories a day than he was consuming 10 years before.

There are researchers who believe that eating small amounts of fat can keep you from overindulging on total calories. Ohio State University nutrition scientist John Allred points out that dietary fat causes our bodies to produce a hormone that tells our intestines to slow down the emptying process. We feel full and are less likely to overeat.

Add a little bit of peanut butter to your piece of fruit and it can help to keep you from a binge later.

Here is another trap to avoid. Reducing fat might not be as smart as it sounds. Tufts University scientists recently put 11 middle-aged men and women volunteers on a variety of average reduced and low fat diets.

The results were astounding. Very low fat diets which provided only 15 percent of fat from calories did have a positive effect on blood cholesterol and triglyceride levels. By the way, that diet is so strict there is no way it could be duplicated in real life. But a reduced fat diet, which is more realistic, only affected those levels if accompanied by weight loss.

Not only that, they concluded that cutting fat without losing weight actually increased triglyceride levels and decreased HDL!

So while excess fat is not healthy, it isn't a dirty word either. Without some fat in our diets, our bodies could not make nerve cells and hormones or absorb fat soluble vitamins.

If obesity is one of your high cholesterol causes, try losing a pound a week with a 500 calorie solution. No, we aren't going to ask you to only eat 500 calories a week!

What you can do is easily lose a pound a week just by cutting 500 calories a day out of your diet. You can easily burn 250 of them just by spending about 30 minutes of aerobic exercise, like bicycling, dancing or just walking. To get rid of the other 250 try cutting out mayonnaise, doughnuts and alcohol.

If there were no other reason to take control of cholesterol, here's one that certainly has merit.

A recent study found that men with high cholesterol are twice as

likely to be impotent as men whose cholesterol levels are normal or low.

Researchers recorded cholesterol levels of 3,250 healthy men between the ages of 25 and 83. Men with total cholesterol higher than 240 milligrams/dl were twice as likely to have trouble achieving or maintaining an erection than men whose cholesterol levels were below 180 milligrams/dl.

Men who had low levels of HDL were also twice as likely to suffer from impotence. The same high-fat diet that narrows arteries and blocks blood flow to your heart also narrows the arteries that carry blood to your penis. Blood has to be able to get to your penis in order for you to have an erection. Take control now and you'll find yourself improving in this area of your life as well.

The typical American diet consists of fatty meats, processed cold cuts, dairy products and fried foods. As if that weren't enough, throw in commercially baked breads, rolls, cakes, chips and cookies. This is a surefire path to high cholesterol.

Oddly, ingesting cholesterol will not raise the blood cholesterol nearly as much as eating a type of fat called "saturated fat." Like cholesterol, saturated fat is primarily found in animal products like cheese, butter, cream, whole milk, ice cream, lard and marbled meats.

Don't believe that if you just change to vegetable oil you can

eliminate the problem. Some vegetable oils are also high in saturated fat. Palm oil, palm kernel oil, coconut oil and cocoa butter are also very high in saturated fat. Unfortunately, these are also most often used in commercially baked goods, coffee creams and nondairy whipped toppings, so make sure you read labels.

Here is a chart showing the comparisons of different oils.

Product	Saturated	Cholesterol	Polyunsaturated	Monounsaturated
Canola Oil	7%	0 mg	35%	58%
Safflower Oil	9%	0 mg	78%	12%
Sunflower Oil	11%	0 mg	42%	47%
Corn Oil	13%	0 mg	62%	25%
Olive Oil	14%	0 mg	12%	74%
Hydrogenated Sunflower Oil	14%	0 mg	40%	48%
Sesame Oil	15%	0 mg	44%	42%
Soybean Oil	15%	0 mg	60%	24%
Margarine, bottled	17%	0 mg	47%	36%
Margarine, tub	17%	0 mg	37%	46%
Peanut Oil	18%	0 mg	33%	49%
Margarine, stick	19%	0 mg	33%	47%
Cocoa Butter	62%	0 mg	3%	35%
Butter	66%	31 mg	4%	30%
Palm Kernel Oil	87%	0 mg	2%	11%
Coconut Oil	92%	0 mg	2%	6%

Although all of the oils listed above (except butter) contain no measurement of dietary cholesterol, to lower your own cholesterol

level, you must use oils low in saturated fat. Canola oil (7% saturated fat) is one of the best available cooking oils. Olive oil (14% saturated fat) is also good to use.

One more rule that makes this chart just a bit misleading. Any fat that is hard at room temperature, such as stick margarine, is not good for your cholesterol. Margarine has been hydrogenated (hardened) and that process adds trans fatty acids.

Trans fatty acids may be as bad for you as saturated fat, so stick margarine is equal to butter as far as your cholesterol is concerned. Diet and soft margarines are a better bet. Also look for brands of margarine or shortening that top the ingredient list with oils rich in monounsaturated fat, like canola oil.

Try substituting butter and margarine with a fruit puree. Prune puree is one particularly popular alternative but try using applesauce and apricots as substitutes.

What has the chefs who specialize in nutrition so excited about using prune puree is the significant difference in fat grams as well as calories. One cup of prune puree has 407 calories and one gram of fat. One cup of butter has 1,600 calories and 182 grams of fat. One cup of oil has 1,944 calories and 218 grams of fat. You can see now why bakers are excited about prunes!

Prunes also contain large amounts of pectin which helps hold in

the air bubbles that make baked goods rise. They also have large amounts of sorbitol, a sugar alcohol, which helps keep baked goods moist and gives them the flaky, tender taste of shortening or butter.

The only drawback to using fruits like applesauce and apricots as fat substitutes is that baked goods tend to become soggy and moldy within a day or two so plan quantities accordingly. Also, when baking with substitutes for fat, use cake flour instead of regular all purpose flour. It will keep the baked good tender. Don't over bake your fat reduced recipes as they do tend to dry out quicker than traditional recipes that call for butter or oil.

Here's another healthy living tip for you. If you really have trouble giving up your favorite high fat cheese, try this. Turn it into a low fat version. Just zap it in the microwave for a minute or two. Pull it out and drain off the oil. It will significantly reduce the fat content of the cheese. This will work well for cheese sandwiches, toppings and other recipes that call for your favorite cheese.

Scientists have discovered that water mixed with fructose suppresses the appetite better than glucose with water or even diet drinks. Fructose is the kind of sugar found in fruits. Drink a glass of fructose rich orange juice a half hour to an hour before a meal. You will eat fewer calories during the next meal and still feel comfortably full.

Don't think that just because we are discussing "fat free" regimens that you must cut beef completely out of your diet. Too much of this "good thing" won't do you any favors. However, you can have your steak and eat it too, provided it's a cut that is relatively low in fat and cholesterol and you do not add fat in the cooking and serving process.

When shopping for beef, select grade eye of the round is considered by some to be just that. A 3 ½ ounce serving has approximately four grams of fat, less than half of the amount in a 1 ounce serving of cheddar cheese. It also contains 69 milligrams of cholesterol, among the lowest for meats, and it is a good source of zinc, iron and other nutrients.

Tip round, bottom round and top sirloin are also relatively lean and high in these nutrients.

Turkey breast and chicken breast are prizes as soon as you remove the skin. Turkey has less than 1 gram of fat and 83 milligrams of cholesterol. Chicken has 3.6 grams of fat and 85 milligrams of cholesterol.

Pork tenderloin is the top choice for the "other white meat," while leg shank is the leanest choice among lamb cuts.

Cinnamon has blood-thinning properties that can help lower cholesterol levels, says Vasant Lad, B.A.M.S., M.A.Sc, director of the

Ayurvedic Institute in Albuquerque, New Mexico. He suggests this tea: Mix 1 teaspoon of cinnamon and ¼ teaspoon of trikatu (a blend of ginger and two kinds of peppers) directly into a cup of hot water, then stir and steep for five minutes.

Add a teaspoon of honey once the tea has cooled. Dr. Lad says to drink this beverage twice daily, once in the morning and once in the evening. Trikatu is available from Ayurvedic practitioners and in some health food stores.

One way to heal many health problems is with a detoxification diet that cleanses the body and re-establishes the nutritional balance needed for optimum health, says Elson Haas, M.D., director of the Preventive Medical Center of Marin in San Rafael, California, and author of *Staying Healthy With Nutrition*. His diet should be practiced for only three weeks. It is not nutritionally balanced enough for longer periods. Do not undergo it if you are pregnant or suffer from deficiency problems marked by fatigue, coldness or heart weakness. Here is the detox diet.

Breakfast

Immediately upon arising, drink two glasses of water, one of them containing the juice of half of a lemon. Also have one to two servings of fresh fruit – apples, pears, bananas, grapes or citrus fruits such as oranges or grapefruit.

About 15 to 30 minutes later, have one to two cups of cooked oatmeal, brown rice millet, amaranth or untoasted buckwheat. For flavoring, you can add two tablespoons of fruit juice or use the Better Butter described below.

Better Butter Recipe

Stir ½ cup of canola oil (look for one labeled “cold-pressed”) into a dish with ½ pound of butter, melted or at least softened, and refrigerate. Use about one teaspoon per meal for flavoring and don’t exceed three teaspoons per day.

Lunch

Have a big bowl (up to four cups) of steamed vegetables – potatoes, yams, green beans, broccoli, kale, cauliflower, carrots, beets, asparagus, cabbage or others. Use a variety, including stems, roots and greens. Better Butter can also be used. Then refrigerate the water from the vegetables for later use.

Within two hours, slowly drink one to two cups of the water from the steamed vegetables, mixing each mouthful with saliva. You can add a little sea salt or kelp for flavoring.

Dinner

Same as lunch, with a variety of vegetables.

Evening (After Dinner)

No food at all, but you can have non-caffeinated herbal

teas such as peppermint, chamomile or blends. No caffeinated beverages.

Throughout the day, feelings of hunger should be satisfied by drinking plenty of water and eating pieces of carrot or celery. If you are feeling very fatigued or if hunger persists, then you may add up to four ounces of protein, such as fish, organic chicken, lentils or garbanzo, mung or black beans. Optimally this should be eaten mid-afternoon, around 3:00 or 4:00.

Again, this is a detoxification diet only and is to cleanse the body and re-establish nutritional balance needed for optimum health. Do not practice the diet for more than three weeks and do not undergo it if you are pregnant or suffer from deficiency problems.

In a restaurant, opt for steamed, grilled or broiled dishes instead of those that are fried or sautéed.

Vary your veggies. Eat more dark green veggies, such as broccoli, kale, and other dark leafy greens; orange veggies, such as carrots, sweetpotatoes, pumpkin, and winter squash; and beans and peas, such as pinto beans, kidney beans, black beans, garbanzo beans, split peas, and lentils.

Read the Nutrition Facts label on foods. Look for foods low in saturated fats and *trans* fats. Choose and prepare foods and beverages

with little salt (sodium) and/or added sugars (caloric sweeteners).

If you eat 100 more food calories a day than you burn, you'll gain about 1 pound in a month. That's about 10 pounds in a year. The bottom line is that to lose weight, it's important to reduce calories and increase physical activity.

Know the facts about what you are purchasing to eat. Read labels carefully.

Most packaged foods have a Nutrition Facts label. For a healthier you, use this tool to make smart food choices quickly and easily. Try these tips:

- Keep these low: saturated fats, trans fats, cholesterol, and sodium.
- Get enough of these: potassium, fiber, vitamins A and C, calcium, and iron.
- Use the % Daily Value (DV) column when possible: 5% DV or less is low, 20% DV or more is high.

Look at the serving size and how many servings you are actually consuming. If you double the servings you eat, you double the calories and nutrients, including the % DVs.

Make your calories count. Look at the calories on the label and compare them with what nutrients you are also getting to decide whether the food is worth eating. When one serving of a single food item has over 400 calories per serving, it is high in calories.

Don't sugarcoat it. Since sugars contribute calories with few, if any, nutrients, look for foods and beverages low in added sugars. Read the ingredient list and make sure that added sugars are not one of the first few ingredients. Some names for added sugars (caloric sweeteners) include sucrose, glucose, high fructose corn syrup, corn syrup, maple syrup, and fructose.

Know your fats. Look for foods low in saturated fats, trans fats, and cholesterol to help reduce the risk of heart disease (5% DV or less is low, 20% DV or more is high). Most of the fats you eat should be polyunsaturated and monounsaturated fats. Keep total fat intake between 20% to 35% of calories.

Reduce sodium (salt), increase potassium.

Research shows that eating less than 2,300 milligrams of sodium (about 1 tsp of salt) per day may reduce the risk of high blood pressure. Most of the sodium people eat comes from processed foods, not from the saltshaker. Also look for foods high in potassium, which counteracts some of sodium's effects on blood pressure.

Remember there is no substitute for your physician. Make certain that you clear any new treatments with him before embarking on any radical health changes you are anticipating.