



FOOD



THE CHOLESTEROL SOLUTION

By Dr. Mark Hyman



DISCLAIMER: The content of this book is based on research conducted by Hyman Enterprises, LLC, unless otherwise noted. The information is presented for educational purposes only and is not intended to diagnose or prescribe for any medical or psychological condition, nor to prevent, treat, mitigate or cure such conditions. The information contained herein is not intended to replace a one-on-one relationship with a doctor or qualified healthcare professional. Therefore, this information is not intended as medical advice, but rather a sharing of knowledge and information based on research and experience. Hyman Enterprises, LLC encourages you to make your own health care decisions based on your judgment and research in partnership with a qualified healthcare professional.

Please do not stop, adjust, or modify your dose of any prescribed medications without the direct supervision of your healthcare practitioner.

These statements have not been evaluated by the Food and Drug Administration.
The information in this book is not intended to diagnose, treat, cure or prevent any disease.

THE CHOLESTEROL SOLUTION

TABLE OF CONTENTS

WHY CHOLESTEROL IS NECESSARY FOR HEALTH.....	3
CHOLESTEROL IS NOT THE PROBLEM.....	4
USING THE RIGHT TESTS	4
LOWERING CHOLESTEROL CAN BE HARMFUL TO YOUR HEALTH	4
DOES A HIGH-FAT DIET ADVERSELY IMPACT CHOLESTEROL?	5
DOES CHOLESTEROL CAUSE HEART DISEASE?	6
THE MAIN CAUSE OF HEART DISEASE	6
COCONUT, CHOLESTEROL, AND HEART DISEASE.....	7
THE TRUTH ABOUT SATURATED FAT	8
WHY I NEVER RECOMMEND A LOW-FAT DIET.....	8
DIABESITY: THE REAL CULPRIT	9
HOMOCYSTEINE - ANOTHER HEART DISEASE RISK FACTOR.....	9
LOWER YOUR RISK OF HEART DISEASE WITHOUT DRUGS	10
GET THE RIGHT TESTS FOR CHOLESTEROL (AND HEART DISEASE RISK).....	11
THE 10-DAY DETOX DIET.....	12
SUPPLEMENTS.....	14
EXERCISE.....	15
STRESS REDUCTION	15
CHOLESTEROL LOWERING MEDICATIONS: WHEN TO USE THEM.....	16
SUMMARY.....	18
REFERENCES.....	19

THE CHOLESTEROL SOLUTION

For more than 35 years the federal government's US Dietary Guidelines told us to limit our intake of foods rich in dietary cholesterol because of the mistaken belief that eating it would promote heart disease.

That was wrong. It's now clear that for most people, the cholesterol in food does not elevate the amount of cholesterol in their blood or increase the risk of heart attacks.

After reviewing all the current research on the link between dietary cholesterol and heart disease, the 2015 Dietary Guidelines eliminated any restriction on dietary cholesterol, quietly declaring that it is "no longer a nutrient of concern."

The government assumed (and so did nearly all nutritionists and doctors) that if blood cholesterol is bad, dietary cholesterol must be bad too.

Except this was never proven and is not true.

WHY CHOLESTEROL IS NECESSARY FOR HEALTH

Cholesterol is not the enemy. Your body needs cholesterol to make hormones, cell membranes, and brain cells. Without enough cholesterol, your testosterone levels would drop and your sex drive and function would plummet. Your cell membranes, which are made of cholesterol, couldn't function properly. Your body would no longer be able to make CoQ10, an important nutrient that cholesterol medications block production of, which could lead to neurological problems.

I could go on, but my point is you want optimize cholesterol levels. It's not about having lower cholesterol; it's about having the **right type of cholesterol**. Years of clinical work seeing over thousands of patients and reading the research has led me design a new "drug" to improve your particle size so you have more of the light, buoyant type. You can get it at your local "pharmacy"—your grocery store. Food should be our medicine and our medicine should be our food.

When you fix your food, you fix your cholesterol. In *Food: What the Heck Should I Eat?*, I've discussed many of those foods including vegetables, fruits, meat, and dairy. My book will help you choose the right foods—and avoid the wrong foods—to optimize your cholesterol.

In *Food*, I also present The 10-Day Detox Diet. This plan will fix your cholesterol, and quickly! One patient had his cholesterol drop 100 points and his triglycerides drop 300 points in just 10 days.

CHOLESTEROL IS NOT THE PROBLEM

It's *oxidized* cholesterol, a rancid fat, which creates trouble. Oxidation occurs when oxygen interacts with substances to create a chain reaction to cause damage.

Imagine rancid oil, an apple turning brown in the air, or skin wrinkling from sun exposure, or your car rusting. Cholesterol only becomes harmful if it is oxidized or turns rancid. That's why it is important to eat a rainbow of fruits and vegetables full of antioxidants.

Rancid or oxidized cholesterol results from oxidative stress and free radicals, which trigger a vicious cycle of inflammation and fat or plaque deposition under the artery walls. The real danger occurs when LDL particles become oxidized and start the buildup of plaque or cholesterol deposits in your arteries.

USING THE RIGHT TESTS

The key to understanding whether cholesterol creates a problem is to get the right type of cholesterol test. And 99 percent of doctors don't do the right test. Most doctors are stuck doing outdated 20th-century testing.

The 21st-century test measures not just your cholesterol by weight (mg/dl), but also the number of particles that make up that number and the size of those particles.

I'm more interested in the quality of those particles. Are they light and fluffy, like soft harmless beach balls, or are they dense, destructive, golf balls?

Those small, dense cholesterol particles cause heart disease. These small particles bang around in your arteries and cause damage, as opposed to large, fluffy beach ball-like ones that just bounce off and don't cause a problem. Some people may even have high cholesterol with a healthy profile of fluffy beach balls.

LOWERING CHOLESTEROL CAN BE HARMFUL TO YOUR HEALTH

The countries where people have higher cholesterol tend to have lower rates of heart disease and the least risk of death. So why are we putting people on statins? The truth is studies show that cholesterol medication works only for those people who have already had a heart attack. Statins *don't* work for the 75 percent of people who've never had a heart attack, which is most of the people taking the drug!

Unfortunately, doctors often prescribe medications like statins to keep cholesterol levels low. But these drugs can introduce a whole host of problems including muscle damage, brain damage, memory issues, Parkinson's-like symptoms, and muscle aches and pains. All of this has been caused by cholesterol medications, which don't necessarily even work.

THE CHOLESTEROL SOLUTION

In fact, a study in the *New England Journal* showed even if your bad (LDL) cholesterol was below 70, if good (HDL) cholesterol was low, the statin drugs don't protect you.

That's obvious if you know the real cause of heart disease, which is sugar (not fat). Sugar drives the good cholesterol down and increases small dangerous cholesterol particles and causes pre-diabetes and diabetes (diabesity). THAT is the true cause of most heart attacks, NOT LDL cholesterol.

So why don't you hear more about this? Because no good drug exists to raise HDL except high doses of the vitamin niacin, which can cause flushing and other side effects. Doctors are trained to focus on the statins, which lower LDL, and billions are spent advertising them even though they are the wrong treatment.

If you're like most patients I see, you're convinced that cholesterol is the evil that causes heart disease. If you monitor your cholesterol levels, and avoid the foods that are purported to cause cholesterol to rise, you hope you'll be safe from America's number one killer.

People fear cholesterol because for years, well-meaning doctors, echoed by the media, have emphasized what they long believed is the intimate link between cholesterol and death by heart disease.

The truth is much more complex. Cholesterol is only one factor, and not even the most important one of many contributing to your risk of getting heart disease.

Cholesterol is a fatty substance, produced by the liver, which is used to help perform thousands of bodily functions. Like I mentioned earlier, the body uses it to help build our cell membranes, the covering of our nerve sheaths, and much of our brain. It's a key building block for our hormone production, and without it we would not be able to maintain adequate levels of testosterone, estrogen, progesterone, and cortisol.

Think cholesterol is the enemy? Think again. Without cholesterol, you would die. In fact, those with the lowest cholesterol throughout the aging process are at highest risk of death. Higher cholesterol can actually, under certain circumstances, help to *increase* life span.

When I convey this simple reality to my patients, they often gasp.

DOES A HIGH-FAT DIET ADVERSELY IMPACT CHOLESTEROL?

Let me debunk another myth. Although most of us have been taught that a high-fat diet causes cholesterol problems, this isn't entirely true.

Here's why: The *type* of fat that you eat is more important than the amount of fat. Trans fats or hydrogenated fats and saturated fats promote abnormal cholesterol, whereas omega-3 fats and olive oil actually improve the type and quantity of the cholesterol your body produces.

THE CHOLESTEROL SOLUTION

The biggest source of abnormal cholesterol is not fat, but sugar, because sugar converts to fat in your body. The worst culprit is high-fructose corn syrup. Consumption of high-fructose corn syrup, which is present in sodas, many juices, and most processed foods, is the primary nutritional cause of most of the cholesterol issues doctors see in our patients.

DOES CHOLESTEROL CAUSE HEART DISEASE?

Now that we've explored when and how cholesterol becomes more problematic, let's take a look at other factors, which play a more significant role in cardiovascular disease or heart disease. First of all, cardiovascular illness results when key bodily functions go awry, causing inflammation, imbalanced blood sugar reactions, and oxidative stress.

To control these key functions and keep them in balance, you need to look at your overall health as well as at your genetic predispositions. It is the interaction of your genes, lifestyle, and environment that ultimately determines your risks—and the outcome of your life.

This is the science of **nutrigenomics**, or how **food is information**. Food influences our risk of disease by turning on the right gene messages with our diet and lifestyle choices.

Every bite of food you take affects your gene expression, hormones, immune system, energy production, metabolism, and even your gut flora, all of which determine the quality of your health. Put in quality information and you get health. Bad information creates disease.

Most things that create chronic disease are under your control including diet, nutritional status, stress levels, and activity levels. Key tests can reveal problems with a person's blood sugar, inflammation level, level of folic acid, clotting factors, hormones, and other bodily systems that affect your risk of cardiovascular disease.

THE MAIN CAUSE OF HEART DISEASE

If most dietary fats aren't the problem, what is? Inflammation is the main cause of heart disease and is what makes cholesterol dangerous. Inflammation can arise from poor diet (too much sugar and trans and saturated fats), a sedentary lifestyle, stress, autoimmune disease, food allergies, or hidden infections such as gum disease, or even toxins such as mercury.

A major study done at Harvard found that people with high levels of C-reactive protein (CRP, a marker of inflammation) had higher risks of heart disease than people with high cholesterol. Normal cholesterol levels were not protective to those with high C-reactive protein. The risks were greatest for those with high levels of both CRP and cholesterol.

A Functional Medicine doctor can evaluate all the factors that cause inflammation for you. You can find a Functional Medicine doctor near you at www.functionalmedicine.org.

COCONUT, CHOLESTEROL, AND HEART DISEASE

It's true we have had a coconut oil craze. So, what's the deal?

Broccoli is healthy, but if it was all you ate, you would get sick. Coconut oil is healthy, but only as part of an overall healthy diet, not as the main course.

Coconut oil has been consumed by populations in the South Pacific for thousands of years without ill effect. It has many health benefits.

Here's the short list: It raises the good cholesterol, HDL. It improves the quality and size and type of cholesterol. It lowers the total cholesterol-to-HDL ratio, a far better predictor of heart disease than LDL. And cultures with more than 60 percent of their diet as coconut oil have no heart disease.

The unique type of saturated fat in coconut oil is called MCT, or medium-chain triglycerides, and it boosts metabolism, reverses insulin resistance, and improves cognitive function. Coconut oil is also antifungal and antimicrobial.

MCTs are odd—they travel from the gut straight to the liver, meaning they're not stored in our fat cells. Instead, they convert easily into energy. Experiments have shown that when overweight subjects consume MCT oil, it speeds up their metabolisms and leads to weight loss and a better ratio of good to bad cholesterol.

Coconut also contains lauric acid, which is great for immune function. The only other good source is breast milk. By the way, breast milk is 24 percent saturated fat—far higher than the 6 percent the AHA recommends. Who would you trust, nature/God or the American Heart Association?

I am sorry that you have to be buffeted about by bad conclusions from insufficient outdated science and bad journalism. I take MCT oil derived from coconut oil just about every single day. It makes your brain sharper and clearer and is a great addition to exercise since it boosts your energy production.

The American Heart Association recently attacked coconut oil for its saturated fat. They still hold on to the wildly outdated theory that saturated fat raises cholesterol, which leads to heart disease. Here was their argument:

“Replacement of saturated with unsaturated fats lowers low-density lipoprotein cholesterol, a cause of atherosclerosis,” the AHA writes in this review. “Taking into consideration the totality of the scientific evidence, satisfying rigorous criteria for causality, we conclude strongly that lowering intake of saturated fat and replacing it with unsaturated fats, especially polyunsaturated fats, will lower the incidence of [cardiovascular disease].”

Simply put, this is bad science. In fact, politics guide this kind of statement more than science.

THE TRUTH ABOUT SATURATED FAT

Saturated fat often gets a bad rep, and that is often unfair. The AHA aren't the only ones perpetuating the saturated-fat-is-bad myth, so let's consider these facts:

- Saturated fat has not been linked to heart disease, despite more than half a century of this belief and billions of dollars of research.
- Saturated fat improves your overall cholesterol profile in the face of a low-carb diet by lowering triglycerides, raising HDL, and decreasing the small, dangerous LDL particles.
- Saturated fat is a problem in the face of a high-carb, low-fiber, omega-3-fat-deficient diet. (In other words, the Standard American Diet.)
- Saturated fat seems to be neutral or improve inflammation in many studies.
- When compared with higher-carb low-fat diets, higher-fat and saturated fat diets do better in improving every single risk factor for heart disease (and promoting weight loss).
- Some dietary saturated fats (from dairy) may reduce the risk of heart disease.
- Blood levels of certain saturated fats are associated with heart disease, but it is carbs that increase those blood levels of saturated fat, not the saturated fats we eat.

As I mentioned before, the fact that saturated fat raises cholesterol is the biggest reason we have vilified meat, butter, and now coconut oil. The logic went that if high blood cholesterol causes heart attacks, and saturated fat raises cholesterol, then reducing saturated fat in the diet should reduce heart attacks and death. Sounds sensible.

Except for one thing: The overwhelming body of research doesn't support this.

WHY I NEVER RECOMMEND A LOW-FAT DIET

Doctors sometimes still recommend low-fat diets to lower cholesterol. This is a bad idea, and here's why: Even though most people don't realize it, fat does not cause your blood cholesterol to go up. It's sugar or anything that turns to sugar, like flour! When you eat sugar—particularly fructose or high fructose corn syrup—it causes the cholesterol-producing factory in your liver to turn on. By default, a low-fat diet is going to be a higher-sugar diet.

If you have high triglycerides, low HDL, or high total cholesterol, getting off sugar and flour (which converts to sugar) becomes the best way to fix this problem.

Despite what we've been brainwashed to think, fat isn't the problem. Studies show that eating more fat can actually fix your cholesterol by increasing the good kind and lowering the bad kind.

THE CHOLESTEROL SOLUTION

Avocados, nuts, seeds, olive oil, and fish oil all reduce your risk of heart disease and improve your cholesterol. And yes, even eggs and the saturated fat from coconut oil or butter are healthy. New studies reviewing all the research on fat and heart disease found no link, even with saturated fat. The only truly bad fat is trans fat.

Eat more quality fat like nuts, avocados, seeds, and coconut butter. And eat good quality protein with every meal. These are very helpful in balancing your blood sugar, balancing your insulin, shutting off the fat-production factory in your liver, and making your cholesterol normal.

I don't recommend a low-fat diet for my patients. In fact, I have them increase the fat in their diet! But I also advise them to dramatically decrease the amount of sugar and flour they eat.

DIABESITY: THE REAL CULPRIT

The biggest cause of inflammation and heart disease is **diabesity**, the spectrum of pre-diabetes to type 2 diabetes that now affects 50 percent of all Americans. 90 percent of patients with diabesity are not diagnosed by their doctors.

Diabesity is the reason for bad cholesterol. This causes your good cholesterol to go down, while your triglycerides rise, which increases small dangerous LDL particles and further increases inflammation and oxidative stress.

And what causes diabesity? The 152 pounds of sugar and 146 pounds of flour consumed each year on average by every American.

HOMOCYSTEINE – ANOTHER HEART DISEASE RISK FACTOR

Many Americans are deficient in B vitamins and up to a third of us have a genetic variation that requires us to have a special form of folic acid called *5-methylfolate* for our body to function properly.

If you are deficient in folic acid, B6, or B12 you will have an increased level of substance called **homocysteine**, which increases your risk of heart disease and dementia. This can be easily addressed by adequate folic acid (as folate) intake along with vitamins B6 and B12. These have to be the right forms of these nutrients to work properly.

LOWER YOUR RISK OF HEART DISEASE WITHOUT DRUGS

Heart disease has very little to do with simply lowering cholesterol with statin drugs. Our current thinking about how to treat and prevent heart disease is at best misguided, and at worst harmful. We believe we are treating the causes of heart disease by lowering cholesterol, lowering blood pressure, or lowering blood sugar with medication. But the real question is what causes high cholesterol, high blood pressure, and high blood sugar in the first place.¹ It is certainly not a medication deficiency!

If you say your genes are responsible, you are mostly wrong. It is the environment working on your genes that determines your risk. In other words, it is the way you eat, how much you exercise, how you deal with stress, and the effects of environmental toxins² that are the underlying causes of high cholesterol, high blood pressure and high blood sugar. That is what determines your risk of heart disease, not a lack of medication.

The research clearly shows that changing how we live is a much more powerful intervention for preventing heart disease than any medication. The “EPIC” study published in the *Archives of Internal Medicine* studied 23,000 people’s adherence to 4 simple behaviors (not smoking, exercising 3.5 hours a week, eating a healthy diet [fruits, vegetables, beans, whole grains, nuts, seeds, and limited amounts of meat], and maintaining a healthy weight [BMI <30]).

In those adhering to these behaviors, 93 percent of diabetes, 81 percent of heart attacks, 50 percent of strokes, and 36 percent of all cancers were prevented.³

And the “INTERHEART” study, published in *The Lancet* in 2004, followed 30,000 people and found that changing lifestyle could prevent at least 90 percent of all heart disease.⁴

These studies are among a large evidence base documenting how lifestyle intervention is often more effective in reducing cardiovascular disease, hypertension, heart failure, stroke, cancer, diabetes, and deaths from all causes than almost any other medical intervention.⁵

Lifestyle modifications don’t just reduce risk factors such as high blood pressure, blood sugar, or cholesterol. Our lifestyle and environment also influence the fundamental causes and biological mechanisms leading to disease: Changes in gene expression, which modulate inflammation, oxidative stress, and metabolic dysfunction. Those are the real reasons we are sick.

The good news is that by fixing the problem at its root results creates benefit for most chronic disease and it makes you feel more alive, healthy, and has no side effects.

Disregarding the underlying causes and treating only risk factors is somewhat like mopping up the floor around an overflowing sink instead of turning off the faucet, which is why medications usually have to be taken for a lifetime. When the underlying lifestyle causes are addressed, patients often are able to stop taking medication and avoid surgery (under their doctor’s supervision, of course).

Some tests can help identify your risks, and simple strategies can dramatically lower your risk of heart disease.

GET THE RIGHT TESTS FOR CHOLESTEROL (AND HEART DISEASE RISK)

Knowing what kind of cholesterol numbers you have is not as critical as the following:

- **Your levels of HDL “good” cholesterol vs. LDL “bad” cholesterol**
- **Your triglyceride levels**
- **Your ratio of triglycerides to HDL**
- **Your ratio of total cholesterol to HDL**

What’s more, we now know that there are different sizes of cholesterol particles. There are *small* and *large* particles of LDL, HDL, and triglycerides.

What’s the most dangerous? Small, dense particles act like BBs easily penetrating the arteries. However, large, fluffy cholesterol particles are practically harmless, even if your total cholesterol is high. They function like beach balls and bounce off the arteries, causing no harm.

If you want to test your overall risk, you can consider asking your doctor to undertake the following tests:

1. **Total cholesterol, HDL, LDL cholesterol, and triglycerides.** Your total cholesterol should be under 200. Your triglycerides should be under 100. Your HDL should be over 60. Your LDL should be ideally under 80. Your ratio of total cholesterol to HDL should be less than 3.0. Your ratio of triglycerides to HDL should be no greater than 4, which can indicate insulin resistance if elevated.
2. **NMR Lipid Profile**, which looks at your cholesterol under an MRI to assess the size of the particles and determine your risk by assessing whether or not you have large or small particles. This is a very important test that can further differentiate the risk of your cholesterol and can be an important factor to track as your system improves and your cholesterol can transform from being small dense and dangerous to light and fluffy and innocuous.
3. **Cardio C-reactive protein.** This is a marker of inflammation in the body that is essential to understand in the context of overall risk. This C-reactive protein should be less than 1.
4. **Homocysteine.** Your homocysteine measures your folate status and should be between 6 and 8.
5. **Lipid peroxides or TBARS test** looking at the amount of oxidized or rancid fat. This should be within normal limits of the test and indicates whether or not you have oxidized cholesterol.
6. **Fibrinogen** is also useful, which is another test looking at clotting in the blood. It should be less than 300.

THE CHOLESTEROL SOLUTION

7. **Lipoprotein (a)**, which is another factor often in men that can promote the risk of heart disease and should be less than 30.
8. **Genes or SNPs** may also be useful in terms of assessing your situation. We now know how to modify our diet and lifestyle according to our genes. A number of key genes regulate cholesterol and metabolism including Apo E genes, and the cholesterol ester transfer protein gene. The MTHFR gene, which regulates homocysteine, is also important and may be part of an overall workup.
9. If you are concerned that you have cardiovascular disease a **high-speed CT** or (EBT) scan of the heart may be helpful to assess overall plaque burden and calcium score. A score over 100 is a concern, and over 400 indicate severe risk of cardiovascular disease.

THE 10-DAY DETOX DIET

To get the right type of cholesterol, lower your triglycerides, and raise the level of good—and necessary—cholesterol in your body begins with your diet.

In *Food*, I discuss the 10-Day Detox Diet, which can help you get off medication, fix your cholesterol, and reduce your risk for heart disease.

Eliminating inflammatory and toxic foods is just part of the 10-Day Detox Diet. The other part involves adding in the good stuff—real, whole foods that nourish your body with every single bite. We all know that food can harm us, but we should all take advantage of the fact that food can heal us, too.

The 10-Day Detox Diet is naturally anti-inflammatory because it removes these foods that create harm and increases all of the wonderful anti-inflammatory nutrients your body needs using whole foods to optimize cholesterol levels starting with your very next meal.

THE CHOLESTEROL SOLUTION

AMONG THE FOUNDATIONS OF THE 10-DAY DETOX DIET INCLUDE:

1. To avoid the blood sugar imbalances that increase your risk for heart disease, **eat protein with every meal**, even at breakfast. This will help you to avoid sudden increases in your blood sugar.
2. **Use lean animal protein** like fish, turkey, chicken, lean cuts of lamb, and plenty of vegetable protein such as nuts, beans, seeds and tofu.
3. **Combine protein, fat, and carbohydrates in every meal.** Never eat carbohydrates alone.
4. For the same reasons, **avoid white flour and sugar.**
5. **Eat high fiber foods**, ideally at least 50 grams per day. Beans, whole grains, vegetables, nuts, seeds, and fruit all contain beneficial fiber.
6. **Avoid all processed junk food**, including sodas, juices, and diet drinks, which impact sugar and lipid metabolism. Liquid sugar calories are the biggest contributors to obesity and diabetes and heart disease.
7. **Increase omega-3 fatty acids** by eating cold-water wild salmon, sardines, herring, flaxseeds, and even seaweed.
8. **Reduce saturated fat** and use more grass-fed or organic animal products, which contain less saturated fat.
9. **Eliminate all hydrogenated fat**, which is found in margarine, shortening, and processed oils, as well as many baked goods and processed foods.
10. Instead **use healthy oils**, such as olive (especially extra virgin olive oil), cold pressed sesame, and other nut oils.
11. **Avoid or reduce alcohol**, which can increase triglycerides and fat in the liver and create blood sugar imbalances.
12. **Don't allow yourself to get hungry.** Graze – don't gorge – by eating every three to four hours to keep your insulin and blood sugar normal.
13. **Try not to eat three hours before bed.**
14. **Have a good protein breakfast every day.** You can start with a protein shake or may use eggs. Some suppliers offer omega-3 eggs, which are ideal.
15. **Include flaxseeds** by using two to four tablespoons of ground flaxseeds every day in your food. This can lower cholesterol by 18 percent. Flax is tasty in shakes or sprinkled on salads or whole grain cereal.
16. **Drink green tea**, which can help lower cholesterol.
17. **Use soy foods** such as soymilk, edamame, soy nuts, tempeh, and tofu, which can help lower cholesterol by 10 percent.
18. **Eat at least eight to ten servings of colorful fruits and vegetables a day**, which contain disease fighting vitamins, minerals, fiber, phytonutrients, antioxidants, and anti-inflammatory molecules.⁶

THE CHOLESTEROL SOLUTION

I've provided more details about the 10-Day Detox Diet and how to re-introduce foods to maintain that plan for life in *Food: What the Heck Do I Eat?*

This book is founded on the principle that food is medicine. It is information. Food literally controls almost every function of your body and mind. And it connects almost everything that matters in our lives.

Food connects us to one another and to our bodies; it can reinvigorate our health, bring families together, restore vibrant communities, improve the economy and the environment, reduce pollution, and even help our kids get better grades and avoid eating disorders, obesity, and drug abuse; food can even reduce poverty, violence, homicide, and suicide.

I wrote *Food* as a roadmap, based on the best and latest science of what to eat, to dispel the confusion and contention that keeps you overweight, sick, and unhappy.

What you put on your fork is the most important thing you do every day. It influences your capacity to live a rich, energetic, connected, soulful life—a life in which you have the energy to care for yourself, to love your friends and family, to help your neighbor, to fully show up for your work in the world, and to live your dreams.

If you enjoy real, whole, fresh foods that you cook using real ingredients, you are positively affecting everything around you.

SUPPLEMENTS

Supplements are important for optimizing cholesterol. Along with a [healthy diet](#) and exercise program, they can dramatically affect your risk of cardiovascular disease. Combining these together can have the greatest impact on your cholesterol.

Here are the supplements I have found most useful in my practice to lower cholesterol and even prevent and reverse heart disease:

1. Everyone must take a good [multivitamin and mineral](#), as well as a purified [fish oil](#) supplement that contains 1000 to 2000 grams a day of [EPA/DHA](#). More may be necessary for those with low HDL and high triglycerides.⁷
2. [Red rice yeast](#) (two 600-mg capsules twice a day), which is another powerful cholesterol-lowering herbal formula.⁸
3. [Plant sterols](#) (beta-sitosterol and others) can help lower cholesterol. Take 2 grams a day.
4. [A soy protein shake](#) can be helpful in lowering cholesterol by about 10 percent.
5. Fiber supplements such as [PGX](#) (Konjac fiber or glucomannan) – 3-6 capsules or 2.5 to 5 grams of powder before each meal with a cold glass of water — can both lower cholesterol and balance blood sugar metabolism.⁹

THE CHOLESTEROL SOLUTION

There are other suggestions and therapies, but these will work for most people. Working with a doctor specializing in nutritional therapy can help sort out questions or difficulties that arise.

EXERCISE

I encourage 30 to 45 minutes of cardiovascular exercise at least six times a week.

You may try interval training (also known as wind sprints and described in [The Blood Sugar Solution](#) if you are feeling stronger. I also encourage strength training to build muscle and reduce body fat composition.

Exercise is a necessity, not a luxury, in preventing almost all chronic disease, from heart disease to cancer, from dementia to diabetes, from osteoporosis to osteoarthritis. You cannot age successfully without it. It is how we are designed.

STRESS REDUCTION

Stress alone can cause a heart attack. It is often the trigger that leads to the cascade of events that causes that final, fatal heart attack.

But all along the way, it contributes to heart disease by creating inflammation, raising your cholesterol and blood sugar, causing high blood pressure and even making your blood more likely to clot.

Therefore, finding ways to manage stress, to relax, and to find the pause button is essential for dealing with nearly all chronic health conditions, including high cholesterol.

Learn to reduce stress by doing regular relaxation exercises such as yoga, tai chi, meditation, breathing, guided imagery, or whatever it takes to engage the relaxation nervous system, which can lower cholesterol and reduce your overall level of inflammation and blood sugar and increase metabolism and [help with your overall health](#).

Try classes, buy CD's (you can try my [UltraCalm audio program](#)) try therapy, or just go out and have fun. But you must do something to switch daily out of the alarm response to maintain your health.

CHOLESTEROL LOWERING MEDICATIONS: WHEN TO USE THEM

Occasionally I will recommend medications if I feel that my patient is swimming upstream genetically, or if there is significant heart disease present already. Then I can carefully weigh the risks and the benefits of medications.

However, it is possible to achieve or exceed the benefits of medications through lifestyle. Dr. David Jenkins from the University of Toronto compared treatment with statin drugs (the number-one cholesterol medication) to a diet high in viscous fiber, almonds, soy, and plant sterols and found they were equal, although the diet was more effective in lowering inflammation and homocysteine.¹⁰

In fact, many of my patients have lowered their cholesterol over 100 points by following the comprehensive program I outline above.

In the rare occasions when I do need to use medications, here are the ones I have to choose from:

- **Statins.** These work by blocking the production of cholesterol in the liver. They can also lower inflammation and very high doses may even reverse plaque or fatty deposits in the arteries. Though now widely prescribed, statin medications do have significant side effects in 10-15 percent of patients who take them. They deplete the body's stores of the vital nutrient called coenzyme Q10. If you're on statins, it is very important to supplement with at least 100 mg of CoQ10 a day. In fact, they have now been linked to an increased risk of Type 2 diabetes. Many patients have to stop taking statins because of muscle pain and aching, known as statin myopathy. It is more common than most people think. And you must have your liver function checked regularly and have your muscle enzymes (CPK) measured to make sure you can continue the medications safely. However, you can have symptoms, pain and muscle injury without having an abnormal CPK test.
- **Niacin.** Also known as vitamin B3, in very high doses (1000 to 3000 mg a day) niacin can be very helpful for raising good cholesterol (HDL) and lowering high triglycerides – something that statins are not very effective at. I use niacin often in my patients who have insulin resistance or pre-diabetes. The major side effect is flushing (sort of like hot flashes), which are benign, subside after an hour, and reduce completely over a few weeks. You can stop flushing by taking a baby aspirin (81mg) half an hour before you take the niacin. I usually recommend long-acting Niaspan and build up slowly over the course of 2 to 6 weeks to the desired dose of 1500 to 2000 mg daily. This needs to be done only under a doctor's supervision.
- **Ezetimibe (Zetia).** Zetia prevents absorption of cholesterol from the intestine. It can interact with the statins to increase the risk of liver toxicity. However recent studies have shown that combining Zetia with a statin actually increases plaque in the arteries even though it lowers cholesterol. Another reason to not assume that lowering cholesterol is what protects us against heart disease.

THE CHOLESTEROL SOLUTION

- **Fibrates.** This class of medications includes drugs such as fenofibrate (Tricor) and gemfibrozil (Lopid) and helps to lower triglycerides and raise HDL. These drugs also act on a newly discovered class of receptors that control inflammation and blood sugar called PPAR, which I talk about in *The Blood Sugar Solution*. The verdict is still out on their effectiveness and safety. I prefer to use niacin, which achieves the same results, at lower cost with less risk.
- **Bile Acid Binding Agents.** Drugs like Questran and WellChol bind up bile in the gut and promote the elimination of cholesterol from the body. Bile is comprised of cholesterol among other things, and getting rid of bile helps lower your cholesterol. These are somewhat difficult to take, and not often used.

SUMMARY

For the vast majority of people The 10-Day Diet along with the right nutrients and lifestyle modifications is better than simply taking a cholesterol medication. To reduce your risk of heart disease you need to address metabolic syndrome, and that can ONLY be done effectively with a comprehensive diet and lifestyle approach like the one outlined above.

Remember, cholesterol is only one of many factors that lead to cardiovascular disease, and it may not even be the most important one. Inflammation and insulin resistance or pre-diabetes are much more important. There are many causes. We have to look at all of them. We focus on cholesterol because it is what we have the best medication for. But remember if all you have is a hammer, then everything looks like a nail.

Comprehensive diet, supplements, exercise, and other lifestyle approaches can have a huge impact your risk of heart disease and can dramatically improve cholesterol. And this approach reduces your risk of nearly all chronic diseases.

Even armed with these strategies, finding the right foods to fix cholesterol levels and reduce your risk for disease can sometimes feel confusing. That's why I wrote *Food: What the Heck Should I Eat?*, to help you undo all the beliefs about food that are making you fat and sick and replace them with a new understanding that will lead to health and longevity.

I believe that cultivating and consuming real, whole food is the answer to many of our world's problems. How we grow it, produce it, and eat it affects almost every aspect of our lives and our society. *Food* is an honest how-to guide designed to answer the question, "What the heck should I eat?"

Food is the doorway to living well and loving well — and to fixing much of what's wrong with our world. You have the power to fix cholesterol, starting with your very next meal.

Medications are available as a last resort to normalizing cholesterol, but I never start them without trying an integrated approach to cholesterol management and heart disease prevention. In fact, the cholesterol comes way down as a side effect of changing their lifestyle. You often don't have to treat it directly.

If you are willing to make the changes in diet and lifestyle and take a few supplements, health, and your numbers may change dramatically — and so will your life.

REFERENCES

- ¹ Mozaffarian D, Wilson PW, Kannel WB. Beyond established and novel risk factors: lifestyle risk factors for cardiovascular disease. *Circulation*. 2008;117(23):3031-3038.
- ² Menke A, Muntner P, Batuman V, Silbergeld EK, Guallar E. [Blood lead below 0.48 micromol/L \(10 microg/dL\) and mortality among US adults](#). *Circulation*. 2006 Sep 26;114(13):1388-94.
- ³ Ford ES, Bergmann MM, Kröger J, Schienkiewitz A, Weikert C, Boeing H. Healthy living is the best revenge: findings from the European Prospective Investigation Into Cancer and Nutrition-Potsdam study. *Arch Intern Med*. 2009 Aug 10;169(15):1355-1362.
- ⁴ Yusuf S, Hawken S, Ounpuu S, et al; INTERHEART Study Investigators. Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study): case-control study. *Lancet*. 2004;364(9438):937-952.
- ⁵ American College of Preventive Medicine. *Lifestyle Medicine—Evidence Review*. June 30, 2009. Available at: <http://www.acpm.org/LifestyleMedicine.htm>. Accessed September 18, 2009.
- ⁶ Kottler BM, Ferdowsian HR, Barnard ND. [Effects of plant-based diets on plasma lipids](#). *Am J Cardiol*. 2009 Oct 1;104(7):947-56.
- ⁷ Micallef MA, Garg ML. [Anti-inflammatory and cardioprotective effects of n-3 polyunsaturated fatty acids and plant sterols in hyperlipidemic individuals](#). *Atherosclerosis*. 2009 Jun;204(2):476-82.
- ⁸ Becker DJ, Gordon RY, Halbert SC, French B, Morris PB, Rader DJ. [Red yeast rice for dyslipidemia in statin-intolerant patients: a randomized trial](#). *Ann Intern Med*. 2009 Jun 16;150(12):830-9, W147-9.
- ⁹ Sood N, Baker WL, Coleman CI. [Effect of glucomannan on plasma lipid and glucose concentrations, body weight, and blood pressure: systematic review and meta-analysis](#). *Am J Clin Nutr*. 2008 Oct;88(4):1167-75. Review.
- ¹⁰ Jenkins DJ, Kendall CW, Marchie A, Faulkner DA, Wong JM, de Souza R, Emam A, Parker TL, Vidgen E, Lapsley KG, Trautwein EA, Josse RG, Leiter LA, Connelly PW. [Effects of a dietary portfolio of cholesterol-lowering foods vs lovastatin on serum lipids and C-reactive protein](#). *JAMA*. 2003 Jul 23;290(4):502-10.