Dr. Marlene's
NATURAL HEALTH CONNECTIONS

VOLUME 8 | ISSUE 07

A PUBLICATION OF PRIMAL HEALTH

## CONTENTS

Myth #1: Cholesterol Is a Harmful Substance .....2

Myth #2: All LDL Cholesterol Is "Bad" .....3

Blood Test Snapshot .....3

Statins Don't Improve LDL Quality .....4

Myth #3: All Plaque Is Dangerous .....4

Myth #4: Eating Fat Raises Cholesterol.....5

Vital First Step: Control Insulin .....5

Vitamin A: How To Benefit.....8

Organic Produce Update...10

Vitamin D Slows Aging....11

How Can I Control Carb Cravings? .....12

# Big Cholesterol Myths Debunked

**Cholesterol-lowering statins are widely publicized and are used to prevent heart disease. But this approach can backfire and miss other, reversible risk factors while leading to unnecessary use of drugs.**

Many of my patients have sought help from me because their doctor told them to take a cholesterol-lowering statin drug to decrease risk of heart disease, and they wanted to find a drug-free alternative. I understand why.

Any medication has risks as well as benefits, and the prospect of having to take a prescription drug for the rest of your life is not an appealing one. Sometimes, medications are necessary and they can save lives. But when it comes to prevention of heart disease and early death, statin drugs have not been proven to be effective.

You may be surprised to hear this because the drugs are so widely promoted and used. So, let me share some science on the subject.

Cholesterol — notably elevated "bad" LDL cholesterol — has been demonized as a major cause of heart disease. If this were the case, you would expect there to be a clear correlation between high LDL cholesterol and heart disease. But this isn't what the evidence shows.

For example, researchers at the University of California, Los Angeles looked at the usual cholesterol test results of over 136,000 people who had suffered from heart attacks. And they found this: Half these patients had cholesterol levels that did not indicate high risk of heart disease.[1]

In other words, an elevated level of "bad" LDL cholesterol may — or may not — indicate that someone is more likely to develop heart disease or have a heart attack. And LDL levels that are considered healthy don't necessarily indicate low risk of heart disease.

Surprised? My patients usually are. So, what's really happening? Before I delve into the answers, I should mention that medical guidelines for statin prescriptions have been changing.

## IN THE NEXT ISSUE:
## Gateways to Better Health

Cholesterol numbers used to dictate, almost exclusively, who should take statins. More recently, the American Heart Association developed a calculator for physicians to estimate heart disease risk using updated medical guidelines. It takes into account some other blood tests (which are a part of routine check-ups), the presence or absence of diabetes, and, optionally, A1c (average blood sugar during the last 3 months).

Last year, a study led by the University of Pittsburgh analyzed how using the updated guidelines and calculator would affect recommendations for statin use. Researchers used data on 3,785 adults, ages 40 to 75. They found that according to the newer guidelines, statins would be recommended to 17.3 million fewer people for prevention of heart disease.[2]

(If you're curious about the American Heart Association calculator, this is where you can find it: https://professional.heart.org/en/guidelines-and-statements/prevent-calculator.)

Are the updated medical guidelines an improvement? Perhaps, a little. However, they continue to miss a very basic point about cholesterol: It is not the demon it's made out to be.

Elevated cholesterol is not the cause of heart disease. Rather, it may be a sign that there are some internal processes going awry that are increasing risk of heart disease.

Here's my analogy to relying on statins to lower elevated cholesterol: If there's a fire burning, just taking drugs to lower cholesterol is like getting a better fan to make the smoke go away while letting the fire keep burning.

What is the most important thing to do for healthy cholesterol and a healthy heart? The first step is controlling insulin and blood sugar, which I discuss on page 5 of this newsletter. But first, I want to dispel the biggest myths about cholesterol and heart health.

## Myth #1: Cholesterol Is a Harmful Substance

In the human body, the liver continually makes cholesterol, a fat-like, waxy substance. This isn't some cruel trick of nature. Our bodies need cholesterol to function properly and stay alive.

Cholesterol is an essential building block of the membrane of every human cell. The membrane provides a protective barrier that enables normal processes within each cell, generating energy and keeping us alive.

As an analogy, the cell membrane is somewhat like the roof of your house. You know what happens if your roof is damaged and leaks. A damaged, leaky cell membrane is much worse because it interferes with the essential processes of life.

Cholesterol is also necessary for your body to make hormones, such as estrogen, testosterone, and other essential hormones. When cholesterol levels are driven too low by medications, hormone depletion and imbalances occur.

Cholesterol helps heal wounds. It rises when you have an injury or acute inflammation and drops once the injury is healed. However, chronic inflammation triggers ongoing elevated cholesterol.

Perhaps the most surprising healing effect of cholesterol is this: In arteries, it helps repair tears. I know this is the opposite of what we typically hear, but it's a natural function of cholesterol.

The brain and nervous system need cholesterol to function normally. Levels that are driven too low by statins can cause mood and memory problems.

Cholesterol is also essential for good nutrition. Your body needs cholesterol to make vitamin D after you've been in the sun. And cholesterol is necessary for the liver

Dr. Marlene's
NATURAL HEALTH CONNECTIONS

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**Natural Health Connections** is a monthly publication of Primal Health LP.



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to produce bile, which you need to digest fat from food and absorb essential fat-soluble vitamins.

In addition, cholesterol is part of your body's internal antioxidant system. Antioxidants reduce damage from free radicals — waste byproducts that cause a process similar to rusting.

Bottom line, we can't live without cholesterol. Some components of cholesterol can contribute to heart disease and other ills, but the routine cholesterol test results don't measure all the components that matter.

## The Two Main Types of Cholesterol

We most often hear about "bad" LDL cholesterol and "good" HDL cholesterol. Routine blood tests measure levels of both. To keep track of which is which, it can help if you imagine that the "H" in HDL stands for "happy."

Here's how they work in the blood: LDL delivers cholesterol to all the cells. HDL removes excess cholesterol. The two types are much like two lanes of a road, LDL going in one direction and HDL in the other. HDL needs to be high enough to remove excess cholesterol effectively.

When it comes to LDL, there is a popular theory that lowering LDL is the most important target of cholesterol treatment. But the evidence doesn't support this approach.

## Myth #2: All LDL Cholesterol Is "Bad"

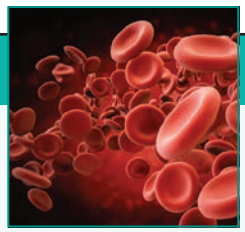
As the study I described on page one of this article shows, LDL numbers don't accurately predict risk of heart disease. Why? Because routine LDL cholesterol tests look only at the quantity of LDL, not the quality — which matters.

The usual cholesterol tests ignore the fact that LDL is made up of two different types of particles: One type is large and fluffy and the other type is small and dense.

The large fluffy cholesterol particles are not harmful, but the small dense ones are. That's because they are damaged by oxidation (an internal process like rusting) and excess sugar in the blood. They are easily deposited in arteries, where they build up into plaque and trigger inflammation. Plaque reduces blood flow because it makes blood vessels narrower. Even worse, it can rupture and produce a clot that leads to a heart attack or stroke.

Unlike LDL numbers in routine cholesterol tests, studies show that the small dense LDL is a valuble

## Blood Test Snapshot



Routine blood tests measure total cholesterol, LDL, HDL, and triglycerides. I generally recommend the additional tests below if any of these apply to you:

- You have a history of heart disease.
- There's a history of heart disease in your family.
- A recent cholesterol score has scared you.
- Your LDL is high.

### Small Dense LDL

This blood test indicates if your LDL is made up of mostly small dense particles, which are harmful, or large fluffy particles, which are not harmful.

### Lipoprotein (a)

Abbreviated Lp(a), this is a subtype of cholesterol that is also measured with a blood test. High Lp(a) indicates an increased genetic risk of heart disease, but it isn't a concern if your other markers indicate low risk of heart disease. If you have elevated Lp(a), use it as motivation to follow a low-carb diet and a healthy lifestyle.

There are several drugs that are being tested to lower Lp(a), but so far none have reached the point of being approved by the FDA. Lp(a) remains constant during the course of life, so it needs to be tested only once.

### Where To Get Tested

Ask your doctor for these tests. If they aren't covered by your insurance, check the cost from your usual providers and shop around, as prices vary from one lab to another.

Below are some labs that work directly with consumers. These sites have long lists of tests, including some that are routinely done by your doctor. The sheer number of tests can be confusing, so I've included specific instructions to simplify getting only the tests I've described.

### Small Dense LDL Test

**DirectLabs:** Search by test name: "small dense LDL," at https://store.directlabs.com

**Ulta Lab Tests:** Use this specific link: https://www.ultalabtests.com/test/sdldl

### Lipoprotein (a) Test

**DirectLabs:** Search by test name: "lipoprotein (a)" at https://store.directlabs.com

**Ulta Lab Tests:** Use this specific link: https://www.ultalabtests.com/test/lipoprotein-a-test

Be sure to check both labs, as prices vary. On the day I checked them, costs for each test differed by $15 to $20.

predictor of heart disease.[3] LDL could be in a healthy range or it could be elevated. In both situations, small dense LDL can be elevated, and that's what can alert you to danger for real.

The lack of knowledge about small dense LDL could misrepresent someone's risk of heart disease, for better or worse. A person with low LDL may seem to be at low risk. However, if their (typically not tested) small dense LDL is elevated, they face higher risk.

In contrast, the risk of a person with elevated LDL but low small dense LDL would seem higher than it really is. This person's LDL would consist of more large fluffy particles that don't cause heart disease.

How can you tell if you have elevated small dense LDL? If your triglycerides (blood fats measured along with cholesterol) are over 100 and your "good" HDL cholesterol is below 50, you probably have higher levels of small dense LDL. In contrast, if your HDL is above 50 and your triglycerides are under 100, you probably have mostly the large fluffy kind of LDL that isn't dangerous. You can also get a blood test for small dense LDL.

One other risk factor is elevated lipoprotein (a), Lp(a) for short. It's usually referred to as "L P little a." This is another subtype of LDL cholesterol. When elevated, it indicates a genetic risk of developing plaque and inflammation in arteries. It's estimated that about 20 percent of people have elevated Lp(a).

There isn't a specific natural or pharmaceutical remedy to lower Lp(a). However, if other tests don't show that you're developing plaque in arteries or other risk factors for heart disease, Lp(a) does not increase risk. (The way to check for plaque in arteries is with a coronary artery scan, a test that I describe in *Myth #3* below.)

If you're concerned about your cholesterol numbers or your overall risk of heart disease, you can test your level of Lp(a) and small dense LDL. For more details about when and how to test these, see *Blood Test Snapshot* on page 3.

## Statins Don't Improve LDL Quality

Despite the fact that statins lower overall LDL and total cholesterol, the drugs don't specifically lower harmful small dense LDL. In fact, statins can increase the proportion of dangerous small dense LDL, according to a study of 612 people with an average age of 61.

Researchers compared the effects of statins on small dense LDL in people with and without heart disease, and levels of small dense LDL in people who were not taking statins. Predictably, they found that statins lowered overall LDL and total cholesterol in the groups who were taking the drugs, but there was some bad news about small dense LDL.

Among those taking statins, the proportion of small dense LDL increased and the proportion of large fluffy LDL decreased.[4] In other words, statins lowered the quantity of LDL but they worsened its quality.

Other studies show that a low-carb diet, exercise, and reducing excess body fat all help decrease small dense LDL.[5] The types of fat you eat, which I'll cover in a moment, also matter.

## Myth #3: All Plaque Is Equally Dangerous

There's no doubt that plaque in arteries is something you want to avoid. That said, not all plaque is equally dangerous. Plaque that is unstable — growing, especially if it's growing quickly — is the most dangerous. It can rupture and cause a clot that triggers a heart attack or stroke.

Cholesterol tests don't measure plaque. The coronary artery calcium (CAC) scan does.

Also called a heart scan, this is a special type of x-ray that shows how much plaque has been deposited in your arteries. Two scans, about a year apart, often provide the most useful information about the health of your arteries because they will show whether plaque is stable, shrinking, or growing.

Getting this test is extremely important. Not only will it give you a good indication of your real heart risk; the knowledge can also be a huge motivator to stick with a low-carb diet and exercise.

I recommend this test if you have a family history of heart disease, have been told to take a statin, or are concerned about your cholesterol or heart health for any reason.

If your doctor hasn't offered the test, ask for it. If your insurance doesn't cover it, it may cost as little as $100. Prices vary, depending on the type of healthcare facility and location.

While plaque accumulates more often with age, this isn't always the case. These are some different scenarios that may be revealed by a CAC scan:

**Plaque is nonexistent.** This is ideal and indicates low risk.

It's prudent to get another scan in about ten years.

**Plaque is slightly elevated.** If this is the case, a second test should be done a year later to see if plaque is growing. If it is, risk is somewhat elevated, and if it is growing quickly, risk is even higher. But if the plaque level is stable, risk is not as high.

Sometimes, plaque may have accumulated in the past but then stopped growing. This can happen because of a very stressful or unhealthy lifestyle in the past. But then, the person's lifestyle changed for the better, plaque stopped building and it's been stable ever since. Even if it is somewhat elevated, stable plaque isn't typically dangerous.

**Plaque is high.** This is visible on one test, and indicates elevated risk. Take steps to reduce risk and retest a year later to see if your efforts are working. If you stop it from growing, you reduce risk.

## Myth #4: Eating Fat Raises Cholesterol

Saturated fat and cholesterol in food have been blamed for unhealthy levels of cholesterol and increased risk of heart disease. These aren't the right targets.

Cholesterol in your blood does not come from food; it's made by the liver. A small percentage of people may experience a slight rise in cholesterol from food sources, but this is not the first thing to address. And beta-glucan supplements (see *Fiber and Supplements* on the next page) can offset this.

Saturated fat can raise the overall levels of cholesterol in a minority of people. However, saturated fat can also increase "good" HDL cholesterol and harmless large fluffy LDL particles while decreasing dangerous small dense particles.[6]

Two other types of fat reduce small dense LDL while increasing large fluffy LDL: the fat in fish or fish oil supplements and olive oil. These work best when they replace inflammatory oils found in most highly processed foods, such as soybean, corn, and cottonseed oils.[7]

## Vital First Step: Control Insulin

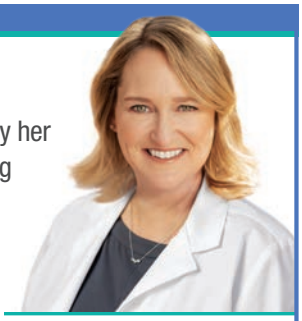
Controlling insulin by eating a low-carb diet is the first step to healthy cholesterol, lower levels of inflammation, and lower risk of heart disease, type 2 diabetes, and other chronic conditions.

My patients are amazed. They find it hard to believe that elevated insulin, as a result of eating too much sugar and starch, drives up cholesterol and risk of heart disease. But it does.[8] Elevated insulin also turns large fluffy LDL particles into dangerous small dense LDL that becomes inflamed and generates arterial plaque.

In relation to cholesterol, insulin works like an "anti-statin." Insulin stimulates an enzyme, HMG-CoA reductase,[9] which triggers production of cholesterol in the liver. Statins, which are called "HMG-CoA reductase inhibitors," reduce cholesterol production by inhibiting that same enzyme.

Cholesterol levels have naturally dropped among many of my patients when they followed my low-carb diet. But you don't just have to take my word for it. Research shows that substituting protein or fat for some starchy and sugary carbohydrates reduces levels of cholesterol.[10] While this may not be the only step you need to take, it's always an essential one. And the same approach also lowers blood pressure and blood sugar.

## About Dr. Marlene



Dr. Marlene Merritt's passion for natural medicine is fueled by her drive to help others and by her own experience of overcoming a debilitating heart condition, diagnosed at the age of 20. A competitive cyclist at the time, she suddenly began experiencing severe chest pains. Forced to quit the sport, she suffered from fatigue and chest pain for another 15 years, despite doing everything that conventional, Western medical doctors told her to do.

And then, the tide turned. A physician trained in naturopathic healing recommended a whole-food vitamin E supplement. A week after starting the supplement regimen, her energy began to return, and the pain began to disappear.

Dr. Marlene is a Doctor of Oriental Medicine, has a Master's degree and is board-certified in Nutrition, and is board-certified in Functional Medicine. She is certified in the Bredesen MEND Protocol™, a groundbreaking method of addressing Alzheimer's disease, and is a Proficiency Diplomate in the Shoemaker CIRS protocol for treatment of mold-related illness. She is the author of *Smart Blood Sugar* and *The Blood Pressure Solution*, and co-author of *The Perfect Sleep Solution*. After 31 years in private clinical practice, she now focuses on writing and educating health professionals and consumers to reach more people and positively impact their health.

## Fiber and Supplements

Soluble fiber helps lower cholesterol and improve its quality by binding with cholesterol in the digestive tract and enhancing its excretion. The fiber also slows down digestion of carbs and helps control insulin and blood sugar.

One particular type of fiber — beta-glucan — has been shown to be especially beneficial.[11] Oats are a top food source but they are also high in carbs. Beta-glucan supplements can provide the beneficial fiber without excess carbs.

Studies have found that beta-glucan supplements reduce "bad" LDL and total cholesterol by up to 7 percent without reducing "good" HDL. Effective doses of beta-glucan supplements derived from oats have been 3 grams per day.[12] Beta-glucan should be taken with meals, so that could equate to 1 gram per meal, three times daily.

Not all beta-glucan supplements are derived from oats. Dosages for supplements derived from other sources will vary, so check labels for suggested use.

If you like bread, Carbonaut is a brand that is low in carbs and a food source of soluble fiber. And some of their breads are gluten-free.

There is also a class of drugs that work in a somewhat similar way, called bile acid sequestrants. Welchol and cholestyramine are examples. These can lower LDL and total cholesterol by 7 percent to 16 percent, which is not as much as statins, but they produce real benefits. Studies have found that they often reverse plaque and drastically reduce small dense LDL; these are greater benefits than those of statin drugs.

One exception: Such results were not found among people with elevated inflammation, measured with C-reactive protein (CRP) tests. (Dental issues are a common trigger of inflammation that can be resolved by receiving the needed dental treatment.)

For my patients who are going to take a statin drug, I recommend that they ask their doctor for a bile acid sequestrant instead.

## A Final Word

My aim is to help you make informed choices when addressing your health concerns. There are situations where medications are needed due to individual health issues, and these should be taken. I don't discount that fact. However, the type of diet I recommend will always be beneficial and may reduce or eliminate the need for drugs.

I should mention a couple of other situations that raise cholesterol: stress and low thyroid. If these are issues, they need to be addressed. And if you're wondering if exercise helps — yes. Exercise is like a magic pill for virtually all aspects of health.

## Related to This Topic

These are some earlier issues of this newsletter that address related topics:


| Related Topic | Volume | Issue | Title |
|---|---|---|---|
| A Healthy Diet | 7 | 1 | My Low-Carb Diet — Fine-Tuned |
| Healthy Fats | 4 | 11 | Healthy Fats: Deadly Myths and Life-Saving Facts |
| Healthy Meat | 3 | 2 | The Diabetic's Guide to Eating Meat |
| Healthy Carbs | 3 | 6 | The Diabetic's Guide to Eating Carbs |
| Statins | 1 | 4 | When Statin Drugs Can Harm You More than Cholesterol |
| Thyroid | 2 | 7 | The 30-Day Thyroid Restoration Protocol |

Access these online by logging in to www.NaturalHealthConnections.com.


1 Sachdeva, A., et al. "Lipid levels in patients hospitalized with coronary artery disease: an analysis of 136,905 hospitalizations in Get With The Guidelines." Am Heart J. 2009 Jan;157(1):111-117.

2 Anderson, T.S., et al. "Atherosclerotic Cardiovascular Disease Risk Estimates Using the Predicting Risk of Cardiovascular Disease Events Equations." JAMA Intern Med. 2024 Aug 1;184(8):963-970.

3 Superko, H., et al. "Small Dense LDL: Scientific Background, Clinical Relevance, and Recent Evidence Still a Risk Even with 'Normal' LDL-C Levels." Biomedicines. 2022 Apr 1;10(4):829.

4 Choi, C.U., et al. "Statins do not decrease small, dense low-density lipoprotein." Tex Heart Inst J. 2010;37(4):421-8.

5 Superko, H., et al. "Small Dense LDL: Scientific Background, Clinical Relevance, and Recent Evidence Still a Risk Even with 'Normal' LDL-C Levels." Biomedicines. 2022 Apr 1;10(4):829.

6 Dreon, D.M., et al. "Change in dietary saturated fat intake is correlated with change in mass of large low-density-lipoprotein particles in men." Am J Clin Nutr. 1998 May;67(5):828-36.

7 DiNicolantonio, J.J., et al. "Effects of dietary fats on blood lipids: a review of direct comparison trials." Open Heart. 2018 Jul 25;5(2):e000871.

8 Sung, K.C., et al. "Elevated fasting insulin predicts the future incidence of metabolic syndrome: a 5-year follow-up study." Cardiovasc Diabetol. 2011 Nov 30;10:108.

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10 Appel, L.J., et al. "Effects of protein, monounsaturated fat, and carbohydrate intake on blood pressure and serum lipids: results of the OmniHeart randomized trial." JAMA. 2005 Nov. 16;294:2455-64.

11 Sima, P., et al. " -glucans and cholesterol (Review)." Int J Mol Med. 2018 Apr;41(4):1799-1808.

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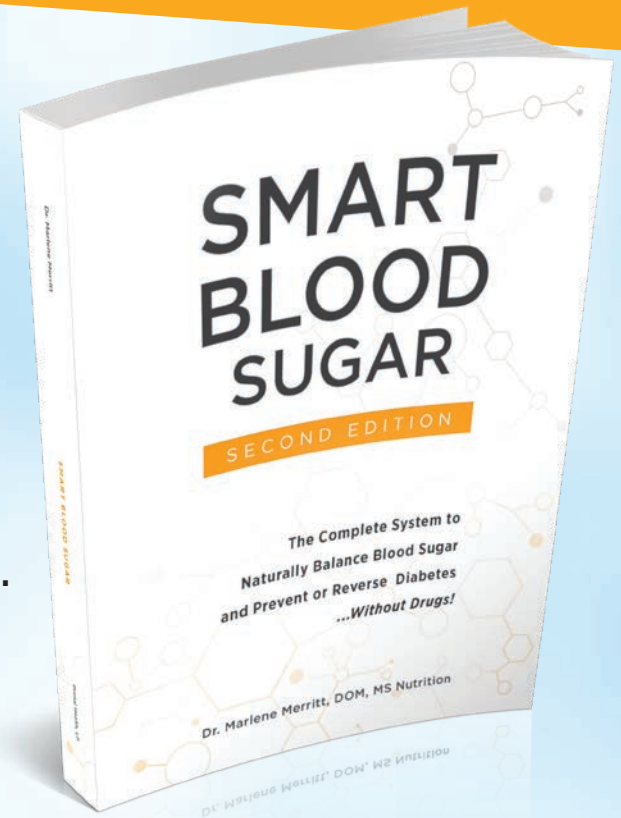
# Dr. Marlene Discovers "Insulin Switch" That Stops Blood Sugar Spikes




**This blood sugar "switch" is built into every cell of the body and, when it is flipped "ON"…**

- **Blood sugar returns to the healthy range**
- **Weight is shed from belly, neck, arms, and thighs**
- **Energy levels return to normal**
- **Sleep becomes easy again**

Dr. Marlene has been helping people repair their blood sugar for the last 15 years.

Just like Arthur Mabee, who was suffering from high blood sugar. His insulin levels were so high, the blood vessels in his eyes began bursting. He was severely overweight and suffering from heart problems. Arthur's doctor wanted to put him on Metformin…

That's when Arthur discovered Dr. Marlene's best-selling book, **Smart Blood Sugar**. "I said, 'Well, I'm going to order this book because this doctor knows exactly what she's talking about,'" Arthur explained.

In just three days of using Dr. Marlene's **Smart Blood Sugar** program, Arthur began to feel changes in his body. He gained more energy, his memory improved, he began sleeping 8 to 12 hours per night—and best of all—he lost 118 pounds since reading the book.

*"I've improved my health 190%... I no longer have diabetes. I no longer have a pre-diabetic condition," shared Arthur. "My eyes have even cleared up. This has definitely helped me more than anything I've ever done in my life."*

Did you see that? Arthur no longer has diabetes. And so can you! Yes—it is possible to reverse type 2 diabetes and maintain blood sugar in the normal range.

Dr. Marlene's **Smart Blood Sugar** is working for people all across America. And she believes it can work for you, too. Here's how...

This simple plan works by doing a few simple things that bring blood sugar down while stopping a few things that have been pushing blood sugar up. It's a combination of these two actions that make the protocol work so well.

Dr. Marlene's **Smart Blood Sugar** has become a best-selling book because it cuts through all the confusing and contradictory information and zeros in on the exact steps to take right now to heal your blood sugar.

In this easy-to-read, 100-page book, you will find step-by-step guidance, easy tools, and dozens of tips on how to maintain healthy blood sugar levels and repair insulin resistance without wasting a lot of time or money.

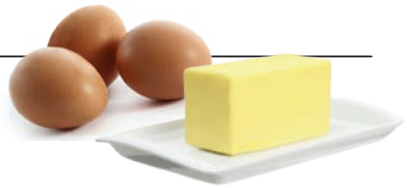
"Get this book, sit down, and do the same thing I did. Read it word for word," Arthur shares with others. "**Smart Blood Sugar** will help you greatly."

It's time to bring your blood sugar back in the healthy range. Get your copy of Dr. Marlene's best-selling book, **Smart Blood Sugar**, today for only $27!

## Order Your Copy Today!

## www.SmartBloodSugar.com/Book

# Vitamin A: How To Benefit



About 45 percent of American adults don't get enough vitamin A, a fat-soluble nutrient that is stored in the liver. That's the finding of a government nutritional survey of more than 26,000 people over the age of 19.[1]

One result of a shortfall can be dry eyes and/or poor vision in low light and at night. In developing nations where malnutrition is a problem, severe deficiency of vitamin A is a major cause of blindness.

The connection between vision and vitamin A is well known. But the vitamin does a lot more.

Vitamin A is essential for production of thyroid hormones and other hormones and for healthy division of cells, which helps protect against cancer. And it works with vitamin D to improve immune function and enhance the ability of vitamin D to help maintain strong bones and perform other vital functions, enhancing overall health.[2]

You might think, if this is the case, more is better. Not so. The benefits come from the right daily amounts: 900 mcg for men and 700 mcg for women. An overload of vitamin A supplements can be toxic. A daily amount up to 3,000 mcg is considered safe, although higher doses are sometimes temporarily used under supervision of a health professional to correct a deficiency.

And there's a catch: Quantities of vitamin A listed on supplement and food labels are misleading.

## Why Labels Mislead

Carrots are one of the leading vegetables associated with vitamin A, but believe it or not, they don't contain any actual vitamin A. Let me explain.

Vitamin A is found in two forms in nature. One is retinol, a form that your body can readily use. It's found only in animal foods. The other form is beta-carotene, found in leafy greens and yellow and orange vegetables and fruits — carrots, for example. This form is a precursor to actual vitamin A.

When you consume beta-carotene, your body has to convert it into the retinol form of vitamin A before you can use it and get the benefits. But — and this is critical — an individual's internal conversion process has to work well for beta-carotene to be effectively converted into the usable form.

When a food or supplement contains beta-carotene, the "vitamin A" amount on a label is actually an estimate of how much retinol (usable vitamin A) you might make from the beta-carotene. If you aren't an efficient converter (and many people aren't), you can develop a shortfall despite taking supplements.

On supplement labels, the retinol form may be listed as "retinyl palmitate," "retinyl acetate," or "vitamin A palmitate." In multivitamins and in separate supplements of vitamin A, some products contain a combination of beta-carotene and the retinol from of the vitamin.

Labels may state a percentage of one of these ingredients. For example, if a combination product contains 900 mcg of vitamin A and the label states that 60 percent is beta-carotene, then 360 mcg (40 percent) is the active retinol form.

I've had many patients whose night vision did not improve despite taking vitamin A supplements with beta-carotene. But it did improve once they took the retinol form.

## Food Sources of Vitamin A

Daily requirements of vitamin A are 900 mcg (3,000 IU) for men and 700 mcg (2,333 IU) for women, from food and supplements. These are some foods that contain the usable retinol form of vitamin A:

| Food | Vitamin A (retinol form) |
|---|---|
| Herring, Atlantic, 3 ounces | 219 mcg |
| Cheddar cheese, 1 ounce | 150 mcg |
| Cheese, ricotta, ½ cup | 133 mcg |
| Other cheeses | Amounts vary |
| Whole milk | 110 mcg |
| Butter, 1 tablespoon | 95 mcg |
| 1 large egg | 75 mcg |
| Sockeye salmon, 3 ounces | 59 mcg |
| Light tuna, canned, 3 ounces | 20 mcg |
| Chicken breast (half) with skin | 5 mcg |

Beef liver contains about 6,500 mcg in a 3-ounce serving. So, if you eat beef liver about once a week, you don't need to take vitamin A supplements.

1 Reider, C.A., et al. "Inadequacy of Immune Health Nutrients: Intakes in US Adults, the 2005–2016 NHANES." Nutrients. 2020 Jun 10;12(6):1735. 2 Džopalić, T., et al. "The role of vitamin A and vitamin D in modulation of the immune response with a focus on innate lymphoid cells." Cent Eur J Immunol. 2021 Aug 7;46(2):264–269.

# Fall Asleep Faster *and* Stay Asleep Longer!


Problems sleeping at night? Not anymore with Primal Labs' **SleepRefined**® and it's unique "dual-release" technology.

**SleepRefined**® takes the proven better-sleep supplement melatonin to a whole new level of effectiveness.

Melatonin has been clinically shown to reduce the time it takes to fall asleep… improve sleep quality… reset your nighttime sleep cycle… and improve next-day alertness.

But typical melatonin clears out of your body quickly, so it may not work all night long.

Yet **SleepRefined**® provides two layers of melatonin to mimic "all night" melatonin production. The first 2.5 mg is released when you go to bed to activate your natural sleep cycle. Then, throughout the night, the remaining 1.5 mg is gradually released to help you sleep longer and deeper.

That's not all. **SleepRefined**® includes…

- **Suntheanine**, a proprietary form of the amino acid L-Theanine, found in green tea. Its "quick release" dose helps calm your mind and prepares it for sleep.
- **Venetron**, a plant prized in Chinese medicine for calming the mind and soothing anxious nerves. It is also clinically shown to improve sleep quality in the middle of the night and later in the sleep cycle.

With **SleepRefined**,® you'll fall asleep faster… stay asleep longer… and wake up refreshed and energized, with no groggy feelings. Safe, natural, non-habit forming.

*"With **SleepRefined**,® I sleep better and do not have that sleepy feeling in the morning."* — *Barbara*

*"**SleepRefined**® works better than any sleep aids I've used!"* — *Bets*

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# Organic Produce Update

I always favor organic produce over conventional versions, but it isn't always available. And it's usually higher priced. Knowing which vegetables and fruits contain the most or least pesticide residues can help you make smart choices.

The USDA tests thousands of samples of non-organic produce found in supermarkets around the country. While it's impossible for you or me to analyze all the results of those tests, the nonprofit Environmental Working Group (EWG) does the work for us.

Every year, EWG publishes a list of the results, ranking 47 types of produce from worst to best. This year, rankings are based on tests of 53,692 produce samples.

Before produce is tested for pesticide residues, samples are peeled or scrubbed and washed. Although washing doesn't remove all pesticides, it may help to reduce their levels.

To make things easier when you shop, EWG publishes *The Dirty Dozen*: the top 12 items with the most pesticide residues. These are most important to buy organic, as much as possible. EWG also publishes *The Clean Fifteen:* the 15 items with the least pesticide residues — the lowest priority for buying organic.

I've included both these lists in the chart on this page. You can use them to prioritize your organic choices when shopping. (But don't skip produce if you can't find organic versions.)

## Some Pesticide Facts

The EWG analysis of USDA produce tests found this:

- Tests of produce showed traces of 265 pesticides.
- Over 75 percent of non-organic fruits and vegetables contained pesticide residues.
- Nearly all the produce on *The Dirty Dozen* list contained pesticide residues.
- Each of *The Dirty Dozen* items, except potatoes, contained an average of at least four pesticides; potatoes contained two.
- On the brighter side, nearly 60 percent of the produce on *The Clean Fifteen* list contained no detectable pesticide residues. And where pesticide residues were found, these were present in smaller amounts.

It's estimated that more than 90 percent of Americans have detectable levels of pesticides in their bodies, and produce is the top source. Pesticides are toxins that can contribute to hormone disruption, nerve damage, and higher risks of heart disease, some cancers, and type 2 diabetes.

On a positive note, a study of four American families, in Oakland, Minneapolis, Atlanta, and Baltimore, found that eating an all-organic diet for just six days dramatically decreased pesticides in the bodies of both children and adults. For some pesticides, levels dropped by 61–95 percent.[1]

Organic agriculture also reduces chemicals in our air and water. Many organic farms are owned and run by families, rather than corporations. Buying organic food, especially if it's grown locally, helps support those families. And summer is the perfect time to visit farmers markets — they're a fun place to shop.

## What To Buy Organic

Knowing which vegetables and fruits contain the most and least pesticides can help you make smart choices.

### The Dirty Dozen

These are most important to buy organic:

1. Spinach
2. Strawberries
3. Kale, collard and mustard greens
4. Grapes
5. Peaches
6. Cherries
7. Nectarines
8. Pears
9. Apples
10. Blackberries
11. Blueberries
12. Potatoes

### The Clean Fifteen

If you have to limit your organic produce purchases, you can buy conventional versions of these:

1. Pineapple
2. Sweet corn (fresh and frozen)
3. Avocados
4. Papaya
5. Onions
6. Sweet peas (frozen)
7. Asparagus
8. Cabbage
9. Watermelon
10. Cauliflower
11. Bananas
12. Mangoes
13. Carrots
14. Mushrooms
15. Kiwi

For the ranking of all 47 fruits and vegetables tested, visit: https://www.ewg.org/foodnews/full-list.php

1 Hyland, C., et al. "Organic diet intervention significantly reduces urinary pesticide levels in U.S. children and adults." Environ Res. 2019 Apr:171:568-575.

# Getting Enough Sleep?

Sleep is one of those basic necessities that is too often skimped on in our culture, and this is a big problem. More than half of American adults think they aren't getting as much sleep as they need, according to a Gallup poll.

Part of the problem may be not getting sleep that is truly restful, because of undiagnosed and untreated sleep apnea in some cases. But schedules and priorities play a major role.[1]

Lack of sleep doesn't just make you run out of steam or feel drowsy during the day — which is reason enough to make an effort to get enough rest at night. It also contributes to unhealthy blood sugar, blood pressure, and cholesterol. And it raises chronic inflammation and risks of heart disease, diabetes, and stroke.

In addition to allowing enough time for 7 to 9 hours sleep, it's important to set and keep a regular sleep schedule. Even if you get enough hours of sleep, an irregular schedule contributes to elevated health risks. One reason is that an irregular sleep pattern doesn't allow your body to rest as deeply as you would with a regular one.

When you hit the pillow also matters. Our ancestors used to go to sleep once the sun set, because they didn't have artificial lighting and blue light from screens. While this isn't realistic today, bedtime before midnight is more beneficial than staying up later.

Getting insufficient sleep during the week and making up for it on the weekend is called "social jetlag." And it's been linked to 20 percent higher risk of weight gain.

If you're part of the majority that thinks more sleep is in order, do adjust your schedule. And you may want to take a look at Volume 5, Issue 4, of this newsletter: *Restful Sleep: How to Get Enough.*

# Vitamin D Slows Aging

You may think summer isn't the time to worry about getting enough vitamin D because it's the sunniest time of year. But this isn't the case.

Even in climates that are sunny year-round, hardly anyone I've ever tested had optimal levels of vitamin D without taking a supplement. Most people don't spend enough time outdoors in sunny weather to make enough of the vitamin. And it's tough to do while not getting too much sun exposure that ages your skin and increases risks for skin cancers.

Bottom line, I recommend taking a vitamin D supplement throughout the year. Vitamin D is essential for calcium absorption and strong bones, and for many other systems in your body, including a healthy immune system, muscles, and brain. As if that weren't enough, a new study found that vitamin D can slow down the aging process.

## How the Study Worked

The research, led by Brigham and Women's Hospital and Harvard Medical School in Boston, tracked more than 25,000 men and women over the age of 50 for 4 years. Researchers tested the effects of 2,000 IU daily of vitamin D against a placebo. Some participants also took 1,000 mg of fish oil daily.[2]

As a marker of aging, researchers measured "telomeres." Telomeres are part of the structure of genetic information in every cell. They help to protect genetic material that enables healthy cell division. Over time, telomeres shorten; when they become too short, cells can no longer divide so they age or die.

The study found that vitamin D, with or without fish oil, reduced shortening of telomeres. The effect was the equivalent of preventing three years of aging.

I recommend getting your vitamin D level tested and taking enough to get your blood levels up to 50 ng/mL. To reach that level, I've found that most people need to take 5,000 IU of vitamin D daily, along with vitamin K2.

For a complete picture of vitamin D and why K2 is needed with high doses, I encourage you to check out Volume 3, Issue 8, of this newsletter: *Vitamin D: Fight Diabetes, Osteoporosis, Infections, and More*.

1 St-Onge, M-P., et al. "Multidimensional Sleep Health: Definitions and Implications for Cardiometabolic Health: A Scientific Statement From the American Heart Association." Circ Cardiovasc Qual Outcomes. 2025 May;18(5):e000139. 2 Zhu, H., et al. "Vitamin D3 and marine ω-3 fatty acids supplementation and leukocyte telomere length: 4-year findings from the VITamin D and OmegA-3 TriaL (VITAL) randomized controlled trial." Am J Clin Nutr. 2025 May 21:S0002-9165(25)00255-2.

# Q&A

**Q: I have a hard time resisting cake at family gatherings or munching on popcorn when I watch TV in the evening. Do you ever get cravings for carbs? What do you do?** *— Jean W.*

**A:** I do get cravings for carbs, and sometimes I am nostalgic for a certain food. But I've found low-carb alternatives that satisfy me. Sometimes I snack on a few nuts or a single-serve squeeze packet of Justin's nut butter. The packets contain slightly over one ounce and are convenient to carry around.

At other times, I have a meat snack. There are so many kinds of jerky and meat snacks, from traditional meat sticks to jerky crisps and chips made from chicken breast. After I snack on nuts or meat for a day or two, I find that I'm not as hungry in the following days and I don't get cravings.

Sometimes I crave carbs because I'm dehydrated, so drinking enough liquid fixes it. At other times, it's just hunger because I haven't been eating enough. I would make sure that your breakfast, lunch, and dinner are low-carb and contain enough fat and protein.

There are low-carb pastas and breads, and pizzas with cauliflower crusts. I had a deep-dish pizza with a pounded-sausage-meat "crust" in Chicago. It was so good! For convenient everyday foods, you can get bowls at Subway or other chains, for example, without bread.

The main thing is to replace high-carb snacks and foods with low-carb ones you like. Otherwise, it becomes an exercise in eliminating things. I've had patients who diligently reduced carbs but would then go hungry for hours and become miserable — not what I recommend.

For cake on special occasions, some people can enjoy a bite. But for my patients who can't stop eating the cake once they start, I recommend skipping it. Part of the process is training your system to adapt to a low-carb way of eating. When you overindulge in carbs, it interrupts that training.

Here's another way to approach cake: Is it an incredibly delicious, memorable cake made by a really good baker with traditional ingredients such as real butter? A small piece may be more satisfying than you think. Or is it a forgettable supermarket-style cake with chemical coloring and filling made of hard-to-pronounce ingredients? If this is the case, is it really worth eating?

**Q: I have heart failure and I take diuretics for fluid retention. Is there anything I can do instead?** *— George H.*

**A:** With heart failure, you *must* get rid of the fluid if you want to live. Drugs work more intensely than natural remedies; in situations where the drugs are saving lives, they need to be continued.

Sometimes, it's possible to strengthen a failing heart and improve your overall health by getting some regular exercise. If walking is difficult, you can start with chair exercises. Your doctor should be able to refer you to a physical therapist or exercise physiologist who can suggest appropriate exercises, or you can find exercises online. This is not a substitute for your medications. However, if your heart becomes strong enough to move those fluids, your doctor will be happy to reduce or remove your diuretic medication.

With a life-threatening condition, medical treatment is required. Which drugs may be necessary to support life depends on how severe the condition has become and whether its cause is reversible.

As an example, my mother was always healthy and physically active until the pandemic lockdowns. And then she became so sedentary that she started to develop heart failure. We caught it very quickly and with a challenging exercise program and a better diet, her health was restored. But with more severe heart damage, medications may be necessary to sustain life.

## Do you have a question for Dr. Marlene?

Send your health-related questions to drmarlene@naturalhealthconnections.com. Please include your first name and the initial of your last name. Although she cannot answer each question directly, Dr. Marlene will select a few in each newsletter and will address other questions and concerns in articles in future issues. Answers are intended for educational purposes only and should not be viewed as medical advice. If you need help with your subscription or have questions about Primal Health supplements, email support@primalhealthlp.com or call 877-300-7849.