

# THE TRUTH ABOUT SUGAR

*Excerpted from "The Schwarzbein Principle" by Diana Schwarzbein, MD*

In medical training, I was taught that a low-fat diet high in complex carbohydrates prevented weight gain and disease. I believed what my professors said. Early on, I advocated low-fat diets. But this soon changed. I now teach my patients to balance their meals. Let me tell you how this all came about.

In July 1990, I had just finished nine years of medical training at the University of Southern California. My training was in endocrinology and metabolism, and I was ready to go out and help the world. I accepted a position at a prestigious medical clinic in Santa Barbara, California. The clinic was famous for having been the premier diabetes center in the United States during the 1920s.

I was excited about starting my new position, but I was not thrilled that all my new patients would be Type II diabetics. My area of expertise was "esoteric" endocrine diseases-hypothyroidism, adrenal and pituitary problems-conditions where the patient's symptoms could be reversed.

Type II diabetics did not get better. I had seen too many diabetics have legs amputated, too many who required kidney dialysis or who had scars down the middle of their chests from coronary bypass grafting. Working with diabetics meant that I would have to watch people inevitably get sicker and die. But having accepted the challenge, I committed myself to giving patients my best care.

Because the patients were all new to me, I spent a full hour with each one, obtaining a detailed history. I will never forget the anxiety I felt when they would begin by saying, "I hope you won't tell me the same thing all the other doctors have said. It just doesn't work for me." They complained of higher blood-sugar levels and high blood pressure, despite medication, and of chronic fatigue, weight gain and abnormal cholesterol profiles.

I heard many stories of patients going for yearly physical exams and being diagnosed with diabetes incidentally. Chemistry panels had come back with a red flag of high blood sugar-diabetes. These newly diagnosed diabetics were put on the American Diabetes Association (ADA) diet-a low-calorie, high-carbohydrate, low-fat, low-protein program. The diet stressed fruit, milk, bread and very little fat. It was very complicated. They had to measure everything they ate-proteins and fats, as well as carbohydrates. These patients had stuck to this diet, only to see their conditions worsen.

Diabetes was considered genetic. The fact that these patients had gotten worse was considered part of the progressive genetic nature of the disease. It was thought that once a person developed diabetes, it could not be reversed. Part of the "standard of care" was to keep diabetics' blood sugar under control to enable them to live relatively normal lives.

Physicians manipulated insulin doses to bring patients' blood sugars down. But my patients complained, "When my other doctors gave me insulin, I gained weight." That made sense because insulin is a fat-storing hormone. The patients' weight gain along with high insulin levels had caused increased blood pressure. Many had been prescribed drugs to lower blood pressure, which in some cases made their blood sugars worse. It was a vicious cycle. They injected insulin, but their blood-sugar levels did not improve. They gained weight and required more insulin. And their cholesterol levels were getting worse. Here were patients who had been accidentally diagnosed with diabetes when they felt relatively well, and now, after following the "standard of diabetes care," they felt terrible. After listening to their stories I thought, My God, we are making diabetics worse!

I remember the sinking feeling as I told them, "I understand why you're upset about what has happened to you. But I would have asked you to follow the exact same regimen the other doctors have been prescribing. At this moment, I don't know what else to tell you, but I'm going to help you get better any way I can."

I decided for the time being to get a baseline. "You're going to monitor your blood sugar seven times a day at home with a blood-sugar monitoring device," I instructed. "Before you eat, an hour after you eat and at bedtime. Write everything down. Everything you're feeling, everything you eat, activities, blood-sugar levels and any other observations. I'll see you again in a week."

When they returned after monitoring their habits, my patients all told me, "It's the food I'm eating!"

It was clear. These patients were monitoring their blood sugar. When they did a "finger blood-sugar stick" in the morning, their blood sugar was normal. Then they ate a perfect ADA breakfast—a bowl of shredded wheat with non-fat milk, a banana and a glass of orange juice—and watched their blood sugar rise one hundred to two hundred points. (A normal blood-sugar response to any meal is no more than ten to twenty points.)

Something they were eating was causing the problem. It could not be the protein. Protein will eventually turn into sugar, but not that quickly. It could not be the fat—they were eating hardly any fat—and fats do not turn into sugar that quickly either. Carbohydrates are the only nutrient group that can be converted into sugar so fast. All carbohydrates are recognized as sugar by the body, whether they are in the form of grains, starches, dairy, fruits or sweets. I suddenly recognized that by recommending a high-carbohydrate diet, we were giving sugar to diabetics.

In order to understand why sugar is so destructive to diabetics you need to appreciate the central role of insulin in human physiology. Insulin is the hormone responsible for tightly regulating the amount of sugar going to the brain after you eat. Insulin accomplishes this in two ways: First, the presence of insulin alerts the liver to incoming high amounts of sugar so that the liver does not let this high sugar pass through to the brain. Second, insulin stows away sugar into cells, thereby decreasing blood-sugar levels. Also, when sugar is stowed, insulin levels normalize. This system keeps blood sugars and insulin levels balanced.

But Type II diabetics are "insulin resistant," which means that the cells will not allow insulin to unload sugar from the bloodstream. Because the cells do not respond to insulin, the pancreas reacts by secreting even more insulin in an attempt to open up the closed cells. This results in Type II diabetics having both high insulin levels and high blood-sugar levels. If you then ask diabetics to eat more carbohydrates (as in the ADA diet), it further increases both their blood-sugar levels and insulin levels.

Requiring diabetics with high blood-sugar levels to follow a high-sugar diet did not make sense. But how could I challenge the ADA? I reasoned that the ADA diet must have been thoroughly researched—they could not be recommending diets that were making people sicker! But all of my Type II diabetic patients returned with the same observations: The ADA diet was causing their blood sugars to rise to dangerous levels.

I decided to see what would happen to my patients' blood-sugar levels if I put them on a "zero"-carbohydrate diet. I asked them to eliminate all obvious carbohydrate foods, such as potatoes, rice, legumes, cereals, breads, fruit, low-fat yogurt, milk and, of course, refined sugar.

Since foods are often a combination of fats, proteins and carbohydrates, if a food caused a rise in their blood sugars we classified it in the carbohydrate category. For example, most people think that

milk is all protein, when in fact the amount of carbohydrates in four ounces of milk drives a diabetic's blood sugar up approximately one hundred points. With this method, the main ingredient of a food and whether it raised blood-sugar levels dictated whether it should be considered a protein, a fat, a nonstarchy vegetable or a carbohydrate.

Because I did not want my patients to go hungry, I added some protein and fats back to their diet. At the time, I still thought that a low-fat diet was healthier, so I asked them to use low-fat dairy products, and to eat egg substitutes, mostly fish and chicken and small amounts of red meat. I also educated my patients about insulin levels. Eliminating obvious carbohydrates for one week would rapidly lower their insulin levels, and they would have to reduce their diabetes medicines accordingly to avoid low blood-sugar reactions.

One week later, the first group of patients returned for an evaluation. I looked at the blood sugar numbers they had recorded. Their progress was astounding. I said, "This is unbelievable!" Some confessed, "Dr. Schwarzbein, I've been cheating. I love red meat and when you said I could have some, I ate it every night for a week."

The "cheaters" were eating real mayonnaise, real cheese, real eggs and steak every day-foods that had been forbidden for so long they could not resist them. Their blood-sugar numbers had fallen dramatically. In fact, the biggest improvements were seen in the patients who "cheated" the most.

By cutting carbohydrates from their diets and adding proteins and fats, most patients (after an initial body-water loss) started losing one to two pounds of body fat per week. They ate fats and lost body fat. All came back to me and said, "I don't understand. I got fatter when I didn't eat fat. Now I'm eating fat and I'm losing weight."

Prior to this, these patients had high blood sugars, abnormal cholesterol panels, high blood pressure, weight gain, fatigue and constant hunger. As they followed the new dietary program their blood sugars normalized, so they were able to get off insulin and/or oral hypoglycemic agents (which treat high blood sugar). Their cholesterol levels improved, so I stopped their cholesterol-lowering medication. Their blood pressures came down, so I stopped their blood pressure medication. I was able to eliminate most of their drugs. They lost body fat and gained muscle mass. Their energy improved. They were not going hungry anymore. They felt great.

My diabetic patients were so happy with the improvements in their health that they began to refer family members to me. Although these referred patients were not diabetic, they suffered from fatigue, excessive body fat with decreased muscle mass, cholesterol problems, high blood pressure and even heart disease. I treated them with the same program. Body fat decreased and muscle mass increased, cholesterol levels normalized and blood pressures came down. They, too, felt great.

Word of my successful "diet" spread. I started treating patients who had the same symptoms as the first two groups but no family history of diabetes. These patients all related histories of poor diets and chronic dieting, including low-fat dieting. The program worked for them as well.

I began to see people with isolated conditions: bad cholesterol profiles, high blood-pressure problems or excessive body fat. I put them on the program, altered by then to include more oils, real eggs, real butter. I was amazed that the same program I used for my diabetics worked for all these people. Regardless of the patient's problem or illness, a balanced diet produced the same results-better health and decreased body fat.

I felt I needed to gain a better understanding of these relationships. As I examined eating habits more closely I realized that, to reduce fat consumption as much as possible, many people cut down on

proteins and ate more carbohydrates. Furthermore, since people had heard that complex carbohydrates are healthy and should form the bulk of their diets, they consumed even more carbohydrates.

Both medicine and the media had promoted the belief that eating a low-fat diet while increasing complex carbohydrates caused people to lose body fat and stay healthy. But I had yet to meet anyone who was healthy or thriving on a low-fat diet. Were the people who did well on low-fat diets so healthy that they had no need for doctors?

I searched the medical literature, looking for studies showing that low-fat diets are healthy. I was surprised to learn that there are no long-term studies showing such results. But numerous studies concluded that fat is necessary to maintain good health. And there are studies spanning three decades relating high insulin levels and heart disease, high insulin levels and hypertension, high insulin levels and excessive body-fat gain and other problems.

The light bulb turned on.

Next, we say to those diabetics, "Your blood sugar is too high, so you need I was taught that diabetic patients have a very high rate of heart disease. Correspondingly, I had observed that diabetic patients frequently had a large scar down the middle of their chests. Frequently I found that these patients had heart bypass surgery before they were diagnosed with diabetes. The implications suddenly occurred to me! After a heart attack, people are told to go on a low-fat, high-carbohydrate diet-which increases both their blood-sugar and insulin levels. The increases in blood sugar and insulin were turning heart patients into diabetics. The newly created diabetics are then told to continue eating a diet high in carbohydrates, which further elevates their blood-sugar and insulin levels.to take insulin to bring that blood-sugar level down." But insulin injections produce even higher insulin levels-as well as increases in weight, blood pressure and the need for more insulin.

Furthermore, the studies I read substantiated a connection between prolonged high insulin levels and the degenerative diseases of aging, such as osteoarthritis, different types of cancer, cholesterol abnormalities, coronary artery disease, less lean body mass with excess body fat, high blood pressure, osteoporosis, stroke and Type II diabetes.

For example, it is known that insulin directs all the biochemical processes that lead to plaque formation in arteries; therefore, I recognized that prolonged high insulin levels lead to heart disease. It is also well known that prolonged high insulin levels could lead to insulin resistance; therefore, I also recognized that prolonged high insulin levels could also lead to Type II diabetes. These studies corroborated my clinical experience showing that elevated insulin is linked to disease. Unfortunately, medical studies had not pinpointed the causes of prolonged high insulin levels that led to insulin resistance. The connection between elevated insulin levels, heart disease and diabetes was assumed to be genetic. But I looked at it from a different angle. Since insulin resistance is connected to degenerative diseases, and since insulin resistance occurs naturally in the aging process, degenerative diseases of aging have to be linked to the aging process.

Because the degenerative diseases of aging were occurring in younger and younger individuals, I began to consider the possibility that degenerative diseases of aging were not genetic but acquired. By "acquired" I mean that people were accelerating their aging process through poor eating and lifestyle habits that raised insulin levels.

Furthermore, medical science had gotten stuck on the assumption that only some people have the high-insulin gene. Again we differed. My clinical experience demonstrated that people acquired (not inherited) insulin resistance-and that too many people were suffering from this condition. I became

convinced that the degenerative diseases of aging (which are the end result of insulin resistance) are accelerated by poor eating and lifestyle habits. In other words, a genetic predisposition to disease is not a "guarantee" that you will develop that disease. Instead, what you do and how you live your life determines your risk for developing insulin resistance and the degenerative diseases of aging.

Of course there are genetic variables. For example, everyone (except Type I diabetics) secretes a different amount of insulin in response to various factors. However, this is clinically significant only when eating and lifestyle habits consistently cause insulin levels to rise. In other words, in a perfect world where everyone ate a balanced diet of real foods and avoided stimulants and stress, there would be no appreciable difference between those people who secreted more insulin and those who did not.

But this is not a perfect world. Poor eating and lifestyle habits have led to an imbalance of insulin levels; because the systems of the human body are interconnected, one imbalance creates another imbalance. This is beautifully illustrated by the current low-fat movement. Low-fat dieting upsets the balance within the human body by initially increasing insulin levels, in turn causing a cascade of hormone imbalances. The low-fat, high-carbohydrate movement promised long, healthy lives and trim, athletic bodies. But instead it caused prolonged high insulin levels, which in turn increased the number of people with heart disease, Type II diabetes, excessive weight gain and many more chronic conditions and diseases.

Here are the facts:

Claim: Eating fat makes you fat. If you do not eat fat, you cannot gain fat.

Fact: A low-fat diet makes you fat. Eating fat causes you to lose body fat and reach your ideal body composition. Furthermore, eating dietary fat is essential for life. Eating fat is essential for reproduction, for the regeneration of healthy tissues and for maintaining ideal body composition.

Claim: Eating fat and cholesterol adversely affects your cholesterol profile and puts you at risk for heart attacks.

Fact: Eating a low-fat diet causes heart attacks. High insulin levels produced by a low-fat, high-carbohydrate diet result in plaquing of the arteries, because insulin directs all the biochemical processes that lead to plaque formation in arteries. Eating fat and cholesterol can prevent heart attacks by lowering insulin levels and switching off the internal production of cholesterol.

Claim: Eating fat causes cancer. Low-fat diets prevent cancer.

Fact: Low-fat diets (high in carbohydrates) cause insulin levels to rise too high—a growth factor and a major player in cancer-cell replication. Dietary fat lowers insulin levels. Dietary fat is also essential for hormone production, which in turn is essential for a healthy immune system. In other words, dietary fat provides the immune system with key components that fight the growth of cancer cells.

Claim: Eating fat increases your risk of high blood pressure (hypertension).

Fact: Cutting fat from your diet increases the risk of high blood pressure because, without fat, insulin levels rise higher in response to food. Insulin stimulates various biochemical processes that can lead to increased blood pressure.

Claim: A low-fat, high-carbohydrate diet, which is the current "standard of care" treatment for diabetes, makes patients healthier.

Fact: Long-term low-fat, high-carbohydrate dieting leads to insulin resistance and, if continued, results in Type II diabetes. This same diet makes diabetics sicker.

It is important to note that these claims are not backed up by long-term scientific studies. But the facts are supported by physiology and biochemistry (true science). By focusing on physiology and biochemistry, and the evidence of my own clinical experience, I learned how prolonged high insulin

levels set off a multitude of chain reactions that disrupt all other hormones and biochemical reactions at the cellular level. I termed this chronic disruption "accelerated metabolic aging," and recognized that it led to body-fat gain, chronic conditions and degenerative diseases.

Throughout the six-year period I have referred to above, I learned that there are other factors that raise insulin levels, both directly and indirectly, and that prolonged high insulin levels are caused not only by eating a low-fat, high-carbohydrate diet but also by stress, dieting, caffeine, alcohol, aspartame (an artificial sweetener), tobacco, steroids, stimulant and other recreational drugs, lack of exercise, excessive and/or unnecessary thyroid replacement therapy, and all over-the-counter and prescription drugs. These factors have become central in the eating and lifestyle habits that have prevailed over the last twenty years and that parallel the rise in the incidence of disease during this same period of time.

My program gradually expanded to include balanced nutrition, stress management, exercise, the elimination of stimulants and other drugs, and hormone replacement therapy-a complete program designed to balance insulin and all other hormone levels.

The Schwarzbein Principle was written to share this program with you-to tell the truth about losing weight, being healthy and feeling younger, by first focusing on this principle: Degenerative diseases are not genetic but acquired. Because the systems of the human body are interconnected and because one imbalance creates another imbalance, poor eating and lifestyle habits, not genetics, are the cause of degenerative disease.

I have seen what high-insulin eating and lifestyle habits do to people. People are getting fatter, sicker and more depressed. Indeed, it has not taken long-only two decades-to realize the repercussions of eliminating fat, one of the most important nutrient groups, from our diet and replacing real food with invented substances, processed foods and stimulants.

Moreover, American society's preoccupation with numbers-whether referring to chronological age, total cholesterol numbers or the number on the bathroom scale-has wrought devastating results. Many popular books offer programs that require time-consuming computations and obsessive measuring and focus on food. But my experience with patients demonstrates that, ironically, the more a person obsesses about numbers the more likely he or she is to engage in harmful behaviors that generate chronic health problems and disease. One of my goals as a physician is to change our culture's fixation on meaningless numbers to an emphasis on quality of life.

When people are told that poor health is genetic, they are more likely to tolerate illness and decreased quality of life as their lot. Along with this resignation comes increased body fat, depression and lethargy. Teaching people that health and vitality are within their grasp, and showing them how to achieve optimum health, is the key to the success of my program. When people understand that they have control over their health, they are motivated to make significant changes in habits.

As a physician, I hope to influence the medical profession so that more emphasis is placed on preventive medicine. Giving people the power to attain balance, to heal themselves and to avoid illness instills motivation, in addition to dramatically improving doctor-patient relationships and potentially revolutionizing the "standard of care."

This book could have been written around the many important studies that are cited in the References section. But the problem is that there is never going to be a perfect study. Questions always remain unanswered, no matter how many references you cite. And there are so many opposing theories that it would be virtually impossible to counter every one of them. I realize that I would have never come to my own conclusions about accelerated metabolic aging if I had focused on

studies rather than true science. So I chose to write a book explaining how the body works at the cellular level, not a book based on other researchers' conclusions.

The truth is, anyone can prevent accelerated aging and disease, achieve ideal body composition and extend longevity. As you learn more about physiology and read the case histories that demonstrate my clinical experience (which shows that aging and disease are one and the same) you will understand how you can gain control over your health. My hope is that the information in this book will lead you to balanced nutrition and to a lifestyle that will regenerate and heal your body so as to prevent accelerated aging and disease and thereby improve the quality of your life.

Courtesy of  
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