THE DIABESITY PRESCRIPTION

MARK HYMAN, M.D.
# Table of Contents

Preface ......................................................................................................................................... 1  

Part I: Understanding the Modern Plague .................................................................................... 3  

Chapter 1: A Hidden Epidemic .................................................................................................... 4  
Chapter 2: Why Current Treatments Are Misguided ................................................................. 6  
Chapter 3: A New Science-Based Approach to Reverse This Epidemic ......................................... 8  
Chapter 4: The Myths About What Causes This Epidemic ......................................................... 12  

Part II: The Seven Keys to Treating the REAL Causes of Diabesity ............................................ 18  

Chapter 5: Key #1: Optimize Your Nutrition ............................................................................. 19  
Chapter 6: Key #2: Balance Your Hormones .............................................................................. 27  
Chapter 7: Key #3: Cool off Inflammation ................................................................................. 29  
Chapter 8: Key #4: Fix Your Digestion ...................................................................................... 33  
Chapter 9: Key #5: Enhance Detoxification .............................................................................. 35  
Chapter 10: Key #6: Boost Your Energy Metabolism ................................................................. 37  
Chapter 11: Key #7: Calm Your Mind ....................................................................................... 39  

Part III: The Diabesity Prescription—A Six-Week Plan to Reverse and Treat Diabesity ............ 42  

Chapter 12: Getting Started—Choose the Right Plan for You .................................................... 43  
Chapter 14: Step #2: Targeted Supplements—Optimizing Metabolic and Cellular Function ...... 59  
Chapter 15: Step #3: Healthy Living—Simple Tips for Fun Exercise and Deep Relaxation ........ 64  
Chapter 16: Step #4: Living Clean and Green—Reducing Exposure to Environmental Toxins... 69  
Chapter 17: Intelligent Use of Medications: Options and Risks.................................................. 72  

Part IV: Personalize Your Plan for Optimal Results .................................................................... 76  

Chapter 18: How to Personalize Your Plan ................................................................................ 77
Chapter 19: Key #1: Optimize Nutrition

Chapter 20: Key #2: Balance Your Hormones

Chapter 21: Key #3: Cool Off Inflammation

Chapter 22: Key #4: Fix Your Digestion

Chapter 23: Key #5: Enhance Detoxification

Chapter 24: Key #6: Boost Energy Metabolism

Chapter 25: Key #7: Calm Your Mind

Part V: What to Do When You've Completed the Six-Week Plan

Chapter 26: What to Do When the First Six Weeks of the Program Are Over

Conclusion: Maintaining Your Health for Life

Request for Feedback

The Diabesity Prescription Resources

Medical References
This program on diabesity is one in a series of health programs that I hope will develop a new way of thinking about health and disease that is not based on conventional, alternative, complementary, or integrative medicine. Rather, the medical approach you will find in these pages is founded on a new way of thinking that looks at the body as a whole system, and uses the best of science and clinical care to address chronic health problems by focusing on the underlying causes of disease. The medicine of future will focus on the causes of disease, not on just treating symptoms. It will treat the system not the symptom or diagnosis.

This approach guides people and health care practitioners toward an entirely new way of diagnosing and treating common health disorders that cause chronic disease in more than 160 million Americans and well over a billion people worldwide.

The methodology is known as Functional medicine and is grounded in a whole new scientific field called systems biology. Systems biology seeks to understand how systems in the body are related and interconnected as a network, rather than simply a series of organs and body parts that have no relationship to one another. The perspective of medical specialization—organizing medicine by organs and diseases—is a flawed view that has placed modern medicine at a crisis point.

Our way of thinking about disease is outdated and does not represent the latest scientific advances. These programs, and Functional medicine in general, will provide a way of navigating the best of science. This new science will change the practice of medicine by helping people deal directly with the underlying causes of disease.

Conventional medicine is the medicine of WHAT. We describe what you have and then match the drug to the disease. But describing WHAT you have doesn’t tell us anything about the cause or how to treat it. It just gives us a name to hang our hat on and helps us find a medication to match the disease. The most important question in medicine is one we almost never ask: WHY?

Functional medicine is the medicine of WHY. It provides a road map for understanding the root causes of disease. Functional medicine provides a map for treating the cause rather than simply suppressing symptoms. Saying you have diabetes doesn’t tell you much about why you got it in the first place. It just helps the doctor find what drug to prescribe.

Functional medicine provides ways of optimizing and enhancing health rather than simply repressing or suppressing symptoms while leaving the underlying cause untreated, which often leads to a worsening of the underlying condition while symptoms are temporarily addressed. Medicine is at a crossroads, and the opportunity exists to change the way we think about health and disease forever.

**Diabesity: A Modern Plague**

This program is not intended to be a comprehensive review of the science or a textbook on diabetes. Rather, it is designed as a tool for use by those with diabesity, the condition of metabolic imbalance and disease.
Diabesity is the condition of metabolic imbalance and disease that ranges all the way from mild blood sugar imbalances to full-blown diabetes.

I have drawn from an extensive review of scientific literature and my own clinical practice of over 20 years to bring you the latest scientific research available on diagnosing and treating diabesity. And I have created a comprehensive program for you to accurately diagnose and effectively treat the underlying causes of diabesity, not just the symptoms. The Diabesity Prescription is a practical guide that addresses the single biggest health epidemic of our time. It will teach you the following:

✧ How to know if you have diabesity or are at risk of developing it
✧ Which tests to get to determine whether you have a problem
✧ How to identify the underlying causes of insulin resistance and diabesity
✧ What changes to make in your diet to help reverse the problem
✧ Which supplements to take in order to improve and optimize insulin function and blood sugar balance
✧ How to use exercise and stress-reducing tools to reverse diabesity
✧ Which therapeutic treatments may help you deal with the underlying causes of diabesity
✧ What to tell your doctor so you can get the information you need to address this problem effectively

With that foundation in mind, you can work through this comprehensive treatment program and determine whether you are currently suffering from diabesity and how you can treat it if you are.

Often medical discoveries take 20 years to make it into medical practice. This program is my attempt to shorten that gap and let you take advantage of the medicine of the future today.
PART I: Understanding the Modern Plague
You might hear many terms used to describe one basic phenomenon—a new epidemic of disordered biology and disease. It is the continuum of abnormal biology from mild insulin resistance to full blown diabetes. We call it by many names: insulin resistance, pre-diabetes, metabolic syndrome, obesity, syndrome X, adult onset diabetes, type 2 diabetes. But, in truth, these are all essentially one problem with varying degrees of severity. The diagnosis and treatment of the underlying causes that drive all of these conditions are actually the same.

That is why I use a more comprehensive term which is starting to be used more widely that describes those who have moved anywhere down the continuum from optimal blood sugar balance and insulin sensitivity to full blown diabetes. That term is diabesity.

Diabesity is our modern plague. It now affects over 1 billion people worldwide. Over 100 million Americans (including 50 percent of those over sixty-five) suffer from the condition in its various forms. African Americans, Latin Americans and Asians have dramatically higher rates of diabesity than Caucasians.

When it comes to full blown diabetes specifically, The Center for Disease Control estimates that nearly 24 million Americans (including 23 percent of those over sixty) suffer from the condition. And over 50 percent of people over sixty-five have diabesity. Nearly 6 million diabetics are undiagnosed. Diabetes is just as severe in other parts of the world: It now affects over 240 million people worldwide and is projected to affect 380 million by the year 2030. This is about ten times the number of people affected by HIV/AIDS worldwide.

Ponder this: From 1983 to 2008, the number of people in the world with diabetes increased 7-fold from 35 to 240 million people. Shouldn’t the main question we are asking be why is this happening, instead of what new drug we can find to treat it?

Diabesity is the leading cause of most chronic disease in the 21st century including heart disease, stroke, dementia and cancer. Consider the following:

✧ It is estimated that nearly all people with with type 2 diabetes have cardiovascular disease (mostly undiagnosed) and one third of all diabetics have documented heart disease.

✧ Those with metabolic syndrome (diabesity without full blown diabetes) are four times as likely to die of heart disease.

✧ Heart disease and stroke are the major killers of those with diabesity. People with diabetes have two to four times increased risk of death from heart disease as those without diabetes, and stroke is three to four times higher in this population.

✧ Diabesity is the leading cause of high blood pressure in our society. Seventy-five percent of those with diabetes have high blood pressure.

✧ It is also the leading cause of blindness among people ages twenty to seventy-four, and kidney failure—accounting for 44 percent of new cases.

✧ Nervous system damage affects 60 to 70 percent of people with diabetes leading to a
loss of sensation in the hands and feet, slow digestion of food in the stomach, carpal tunnel syndrome, sexual dysfunction, and other nerve problems.

✧ Almost 30 percent of people with diabetes age forty or older have impaired sensation in their feet, which frequently leads to amputations.

✧ Diabesity also leads to periodontal or gum disease. Poorly controlled diabetes makes it three times more likely you will have periodontal and severe gum disease.

✧ There is a four-fold increased risk for dementia in diabetics.vii

✧ The link between obesity and cancer is well proven and is driven by insulin resistance.viii

Diabesity also places a large economic burden on our society. Direct and indirect costs of diabetes in America in 2007 amounted to $174 billion dollars. The cost of obesity is also significant and accounts for $113 billion dollars every year. Over 10 years, these two conditions cost us a total of $3 trillion. That’s three times the estimated cost of fixing our entire health care system! Between 2009 and 2034, the number of people with diagnosed and undiagnosed diabetes will increase from 23.7 million to 44.1 million in the United States. During the same period, annual diabetes-related spending is expected to increase from $113 billion to $336 billion (2007 dollars).ix

Diabetes is not just a problem for rich countries. It is a global epidemic that is increasing in developing countries as well.x

In India, diabetes presents more risk of death than does infectious disease. In the Middle East nearly 20 to 25 percent of the population is diabetic. The International Diabetes Federation predicts that the number of individuals with diabetes will increase from 240 million in 2007 to 380 million in 2025, and 80 percent of those affected will be in lower- or middle-income countries.

Sixty percent of the world’s population of diabetics will eventually come from Asia because it is the most populous region, and the number of individuals with impaired glucose tolerance or prediabetes there will increase substantially. Interestingly, people in this Asian population, which is uniquely susceptible to diabetes even though it may not be obese, are increasingly affected as they adopt a more Western and American diet. Weaker environmental laws and regulations also expose them to increasing levels of toxins, which, as we will see later, are a leading cause of diabesity.xi

So we clearly have a massive global problem on our hands, and we know that our current approach to prevention and treatment is not working because millions more are affected every year in a dramatic increase of a condition that was once very rare.

The question is, “Why?” What has caused this diabesity pandemic? And why are our current approaches to treating the problem failing so miserably?

The answers to those questions are disarmingly simple.
Our current approach to diabesity focuses on treating the symptoms or risk factors of the disease rather than the causes. All of our attention is on treatments that lower blood sugar (diabetes drugs and insulin), lower high blood pressure (anti-hypertensive drugs), improve cholesterol (statins), and thin the blood (aspirin). But we never ever ask the most important question:

Why is your blood sugar, blood pressure, or blood cholesterol too high and why is your blood too sticky and likely to clot?

Put another way: What are the root causes of diabesity? Answering that question must be the focus of our diagnosis and treatment of this disease if we are going to solve this global epidemic.

In truth, diabetes, elevated blood sugar, blood pressure, and cholesterol are simply downstream symptoms that result from problems with diet, lifestyle, and environmental toxins interacting with our unique genetic susceptibilities.

These are the real causes of diabesity.

Using medication or surgery to treat symptoms like imbalanced blood sugar, high cholesterol, high blood pressure, and the other complications of diabetes is like mopping up the floor while the sink overflows. In medicine today we have a choice. We can continue to mop up this overflow, or we can deal with the source of the problem and turn off the faucet.

Shocking new findings must make us question our outdated approach to treating diabetes by simply lowering blood sugar with medication or insulin. The ACCORD study published in the New England Journal of Medicine in 2008 involved 10,000 patients with diabetes who were designated to receive intensive or regular therapy to lower blood sugar. These patients were monitored and their risks of heart attack, stroke, and death were evaluated.

Surprisingly, the patients who had their blood sugar lowered the most had a higher risk of death. In fact, the study had to be stopped after three and a half years, because it was evident that the aggressive blood sugar lowering led to more deaths and more heart attacks.

How could this happen if, as we believe, elevated blood sugar is the cause of all the evils of diabetes? Why would lowering blood sugar lead to worse outcomes?

The reason is simple. Elevated blood sugar is a symptom of underlying metabolic, physiologic, and biochemical processes that are out of balance. Lowering blood sugar with medications does not address the underlying issues that gave rise to the high blood sugar in
the first place.

This may surprise you, but many of the methods used to lower blood sugar such as insulin or oral hypoglycemic drugs actually make the problem worse by increasing insulin levels. Contrary to what most people think, type 2 diabetes is a disease of too much, not too little, insulin. Insulin is the real driver of problems with diabesity.

Type 2 diabetes is a disease of insulin resistance.

When your diet is full of empty calories and an abundance of quickly absorbed sugars, liquid calories,\textsuperscript{xiii} and carbohydrates (like bread, pasta, rice, and potatoes), your cells slowly become resistant to the effects of insulin and needs more and more to do the same job of keeping your blood sugar even. Thus you develop insulin resistance. A high insulin level is the first sign of a problem. The higher your insulin levels are, the worse your insulin resistance. Your body starts to age and deteriorate. In fact, insulin resistance is the single most important phenomenon that leads to rapid and premature aging and all its resultant diseases, including heart disease, stroke, dementia, and cancer.\textsuperscript{xiv, xv}

As your insulin levels increase it leads to an appetite that is out of control, increasing weight gain around the belly, more inflammation and oxidative stress, and myriad downstream effects including high blood pressure; high cholesterol; low HDL, high triglycerides;\textsuperscript{xvi} weight gain around the middle; thickening of the blood; and increased risk of cancer, Alzheimer’s, and depression. These are all a result of insulin resistance and too much insulin. Elevated blood sugar is not the source of the problem.

This leaves us with a couple of questions:

◊ What is \textit{causing} our insulin resistance?

◊ How can we address the fundamental underlying problem of our bodies resisting the effects of our own insulin?

Success in the treatment of diabetes will only come from addressing the upstream causes of the disease—the factors that are leading to this problem with insulin resistance—rather than simply trying to treat the symptoms. As we learned from the ACCORD study, treating only the symptoms can actually worsen the outcome.

If we keep doing things the same way, namely using conventional medical approaches to diagnosis and treat diabesity, we will get the same result—an exploding epidemic of disease and misery.

We must use a new approach based on systems biology, an understanding of the body as a network of integrated physiological systems. The science of this systems approach is forcing us to redefine all disease based on causes rather than symptoms.\textsuperscript{xvii} That approach is called Functional medicine.
My goal in medicine is to provide a way of navigating and sorting through health information based on a new set of questions—based on an entirely new way of thinking about health and disease. I want to find the right treatment for each person, regardless of what that treatment may be. If a medicine is the best treatment, I will choose that; if a change in diet, supplements, herbs, or lifestyle treatments work best, then I will choose those.

This is known as patient-centered health care, rather than disease-focused medicine, and it is a fundamental underpinning of Functional medicine—a revolutionary new way of thinking that provides a method for understanding how our genes, our environment, and our lifestyle interact to determine health or disease.

The question isn’t “what disease you have,” but “which system or systems in your body are out of balance.” The question is this: How do we restore disturbances in our biological network to normal function? The goal is to understand what disturbs the normal function of these systems, and how we can best create optimal function. I am not so much interested in helping patients get perfect lab tests; I’m interested in helping them identify how the particular systems in their body are working or not working. Then we have to help get those systems back in balance.

This must be done by treating the system, not the symptom. It is like treating the soil, not the plant. Our modern industrial agriculture neglects the health of the soil, pouring on fertilizers, pesticides, and herbicides, which would be unnecessary if we simply cared for the health of the soil. Similarly, modern industrial medicine treats the disease with medication and surgery. Functional medicine treats the human system and allows the body to heal itself, just as there is no need for fertilizer or pesticide if the soil is healthy.

Most medicine today is based on clear-cut, on-or-off, yes-or-no diagnoses that often miss the underlying causes and more subtle manifestations of illness. Most conventional doctors are taught that you have a disease or you don’t; you have diabetes or you don’t. There are no gray areas.

Practicing medicine this way is extremely misguided because it misses one of the most fundamental laws of physiology, biology, and disease: The continuum concept. There is a continuum from optimal health to hidden imbalance to serious dysfunction to disease. Anywhere along that continuum, we can intervene and reverse the process. The sooner we address it, the better.

For example, when it comes to diabesity most doctors just follow blood sugar, which actually rises very late in the disease process. If your blood sugar is 90 or 110, you don’t have diabetes. If it is over 126, you do have diabetes. But these distinctions are completely arbitrary, and they do nothing to help treat impending problems. I remember one patient, Daren, who came to see me with mildly elevated blood sugar. I asked Daren if he had seen his doctor about this. He said yes. I then asked, “What did your doctor say?” Daren’s doctor had told him, “We are going to wait and watch until your blood sugar is more
elevated, and then we are going to treat you with medication for diabetes.”

This attitude is absurd and harmful in the face of what we know about the problems that occur even in the absence of full-blown diabetes. And it completely ignores more subtle clues from symptoms and signs of disease, which may highlight underlying metabolic imbalances (especially when complemented by further testing). These imbalances may be remedied by the appropriate treatment—treatment that is not focused on some disease, but instead works to remove those things that alter or damage our functioning, and provides those things that enhance, optimize, and normalize our functioning by balancing the system rather than treating the symptom.

That attitude is also why diabesity is so woefully and inadequately diagnosed and treated, leaving millions of Americans suffering needlessly from chronic symptoms. Nearly half of all diabetics are undiagnosed, and nearly ALL of the 100 million Americans with pre-diabetes are undiagnosed. Most doctors just don’t know how to diagnose it, or what to do about it, because there is no good drug treatment.

The truth is that the road to diabetes starts as early as childhood. In fact, we are now seeing an epidemic of type 2 diabetes in children as young as eight years old. Pediatric diabetic specialists, who for years took care of only type 1 diabetes, which is an autoimmune disease, now have their offices overwhelmed with type 2 diabetes, a lifestyle and environmental disease. By the time you’re diagnosed with diabetes, you have problems with insulin and blood sugar that could have been detected twenty to thirty years earlier. That is, if you knew where to look, which most doctors are not trained to do. Given our current level of scientific understanding of diabesity, I find this concept of watching and waiting until more serious disease occurs unfortunate, misguided, and often dangerous.

High levels of insulin precede type 2 diabetes by decades. Insulin resistance and the diabesity associated with it are often accompanied by increasing belly fat, fatigue after meals, sugar cravings, high triglycerides, low HDL, high blood pressure, problems with blood clotting, and increased inflammation. These clues can often be picked up long before you ever get diabetes, and may help you prevent diabetes entirely. If you have a family history of obesity (especially around the belly), diabetes, early heart disease, or even dementia and cancer, you are even more prone to this problem.

Most people know about the common complications of diabetes, such as heart attacks, strokes, amputations, blindness, kidney failure, and nerve damage. Some may even know that diabetes increases your risk of dementia and cancers and can cause impotence and infertility (especially in women). But most people don’t realize that insulin resistance or prediabetes can be just as effective in causing heart attacks, strokes, dementia, cancer, impotence, and infertility decades before you get diabetes.

In fact, many people with prediabetes never get diabetes. But they are at severe risk just the same.

The fact is that both the symptoms and the long-term complications of diabetes and insulin resistance cross over. The classic diabetic symptoms of excess thirst, urination, and weight loss are specific to diabetes, but all the other warning signs (blood sugar and insulin imbalances, for example) are there for many years before those telltale signs crop up. We could eliminate many of the long-term complications of diabesity if we simply addressed these warning signs and diagnosed
the problem much earlier in the process.

Discovering why imbalances in blood sugar and insulin occur requires looking at how the body responds to a sugar load—what happens to insulin levels and blood sugar then is much more important than just seeing a random blood sugar level.

Rather than focus only on blood sugar levels, we must focus on all the underlying causes that are driving these problems in the first place. You see, ALL the phenomena that we see in diabesity are the results of the same thing: imbalances in the seven key systems in your body, the seven systems that form the web or network of your biology.

The Real Causes of Diabesity: Imbalances in the Seven Keys to UltraWellness

Over the last 20 years an emerging body of scientific knowledge has pointed to a number of factors that are the true drivers of diabesity, but they are not the things we usually think of as causing diabetes.

We now know that your lifestyle and environment wash over your genes to create changes in your moment-to-moment biological functioning. Those changes in gene expression or function are what result in the symptoms we see in diabetes, namely, elevated blood sugar, high blood pressure, elevated cholesterol, high triglycerides, low HDL, thickening of the blood, inflammation, sexual dysfunction, infertility, depression, Alzheimer’s, cancer, heart disease, and many other complications including kidney disease, nerve damage, and blindness.

Your symptoms—high blood sugar, high blood pressure, cholesterol, and the rest—are NOT the cause of diabesity. They are simply clues to help us find the real underlying causes.

Our approach to diabesity must shift from simply treating high blood sugar, blood pressure, and cholesterol and thinning the blood to fixing the fundamental causes of the problem. The fundamental causes are imbalances in key systems of the body that results in insulin resistance, problems with blood sugar control, and all the other complications and associated problems.

There are seven fundamental systems in your body that can get out of balance. These seven key systems form the basis of Functional medicine. I call them the seven keys to UltraWellness, and they help us filter and understand the root causes of all disease, and especially of diabesity.

An understanding of these basic systems, how they get out of balance, and how to get them back in balance allows us to create a personalized medicine program for each person. This is the medicine of the future. Ralph Synderman, MD, of Duke University, calls this “P4 Medicine” or “Prospective Medicine”xx—personalized, preventive, predictive, and participatory (meaning that you have to actively participate in your own care!).

To heal from diabesity, or overcome any of the other chronic illnesses you suffer from, you must rebalance the seven key systems in your body that are at the root of health and illness. Here is how you can correct imbalances in these systems:
Key #1: Optimize Nutrition
Key #2: Balance Your Hormones
Key #3: Cool Off Inflammation
Key #4: Fix Your Gut
Key #5: Enhance Detoxification
Key #6: Boost Energy Metabolism
Key #7: Calm Your Mind

Imbalances in these underlying key systems are at the heart of all chronic illness, including diabesity. In this program, I am going to explain exactly how imbalances in these seven systems can lead to insulin resistance and other problems related to diabesity, and I am going to provide you with a comprehensive program for rebalancing these systems. This will allow you to leverage the latest scientific information available so you can heal from this modern plague.

But first we must give up a few myths we hold dear about diabetes and obesity—myths that keep us stuck in our old way of thinking.
Many of the notions we hold to be true about disease are, in fact, misconceptions or falsehoods, especially when it comes to diabetes. Before we can go beyond simply treating symptoms and risk factors to treat the real causes of diabesity, we must give up some of our false thinking, or the myths of diabetes.

**Myth 1: Diabetes Is Genetic**

As I mentioned earlier, from 1983 to 2008 the number of people in the world with diabetes increased from 35 million to 240 million, or seven-fold. This could not happen with a purely genetic or inherited disorder.

We have been led to believe that diabetes is a genetic disorder inherited from our parents. We believe that if we have a family history of diabetes we are more likely to get it. We believe that diabetes is essentially a random genetic event over which we have no control.

The truth is quite different.

Diabetes is almost entirely induced by environmental and lifestyle factors. While there may be some predisposing genes, those genes only get turned on under conditions of poor diet, sedentary lifestyle, stress, and exposure to environmental toxins. Therefore, a search for the gene for diabetes and the magic bullet to treat it will lead us down a false road. It will remove our focus from the most important target: addressing the modifiable lifestyle and environmental factors that are driving this epidemic in the first place—how we eat, how much we exercise, how we manage stress, our exposure to environmental toxins, and our toxic food environment.

These are the real underlying cause of diabesity. These factors directly influence our genes, resulting in changes in gene function or expression that lead to the disordered biological states called diabesity, hypertension, or elevated cholesterol.

For those who are still not convinced and believe that diabetes is genetic, let me tell you the story of the Pima Indians.

**The Pima Indians: A Tale of Two Carbs**

The Pima Indians, who live in Arizona, had a metabolism that evolved to thrive perfectly on special foods that exist only in a desert environment. One hundred years ago they were thin, fit, and suffered none of the diseases of Western civilization such as obesity, heart disease, or diabetes. Yet in one generation they have become one of the most obese populations in the world, second only to the Samoans. Eighty percent have type 2 diabetes by the time they reach 30, and they have a life expectancy of only 46 years. What happened? Did they suddenly mutate and get the obesity gene?

No. The answer is much more complicated. Traditionally the Pima diet consisted of whole grains, squash, melons, legumes, beans, and chilies, and was supplemented by gathered foods including mesquite, acorns, cacti, chia, herbs, and fish. It was a diet of whole, unrefined, and unprocessed foods. Interestingly, this diet is very high in carbohydrates. Yet for all that these people
were a fit and healthy until their diet changed. Over the course of one generation, they went from eating this traditional diet to eating the “white menace.” Both diets were equally high in carbs, so what was it that changed so radically that a culture once fit and fabulously attuned to its environment became one of the most obese cultures in the world? Was it a switch from a higher-fat, higher-protein, Atkins-, South Beach-type diet to a diet high in carbs that led them to gain enormous amounts of weight? Absolutely not. The traditional Pima diet—the diet that kept them thin and healthy—was very high in carbohydrates.

Scientists estimate that the traditional Pima diet, although seasonably variable, was approximately 70-80 percent carbohydrate, 8-12 percent fat, and 12-18 percent protein. But before you start back on your old bagel, potato, pasta, and low-fat muffin diet, let’s consider WHAT KIND of carbohydrates the Pima Indians ate.

The traditional cuisine of the Pimas was filled with meals that had a low glycemic load. This means that the carbs the Pimas ate converted into sugar relatively slowly in their bodies. These carbs included tannins (a group of astringent and bitter compounds found in the seeds and skins of grapes, which slows oxidation and aging), vitamins, and minerals. They were dense with phytonutrients, nutrients, and antioxidants. In essence these carbs were “good” carbs. They sent the Pima body positive signals of weight loss and health.

The information contained in the food they ate changed dramatically when their diet changed. They went from eating food that sent messages to balance their weight and metabolism to eating foods that directed their bodies to gain weight and develop diabetes. These new carbs had a high glycemic load, were digested much too quickly, and caused insulin to spike. These were “bad” carbs.

As a consequence of this change in diet, the Pimas went from being a healthy people who were exquisitely adapted to their environment to being one of the fattest, least healthy cultures on the planet—and they did so in a single generation.

The Pimas didn’t have much of a choice about this. You do.

**What a High-Glycemic-Load Diet Has Cost the American People**

The situation of the Pimas may not seem particularly relevant to you. After all, you weren’t raised eating chia and mesquite. But if you look at what eating a high-glycemic-load diet has cost the American people, the comparison might be brought into perspective for you.

The number of obese people in this country has *tripled* since 1960. Interestingly, this date corresponds directly to two major dietary shifts in our culture. This was right about the time the “benefits” of a low-fat diet started being promoted by government, food corporations, and the pharmaceutical industry. As scientifically unfounded as these claims were, they had a major impact on the health of the American people. Our fat consumption declined dramatically, while the incidence of obesity skyrocketed. This was the first major shift in our diet.

When all the fat in our diet was reduced so dramatically, what do you think it was replaced with? If you guessed high-glycemic-load carbs, you are right. This was the second major shift in the American diet. The absence of fat meant that we had to fill that slot in our diets with something. That something was highly processed carbohydrates that are cheap to produce and hence very profitable.
These dietary alterations were reinforced by government when the FDA published the original food pyramid that suggested your daily intake of high-glycemic-load carbs in the form of bread, rice, and cereal should be the single biggest component of your diet. As a result, our intake of these bad carbs soared throughout the 1990s.

The consequence? Today two-thirds of our population is overweight and obesity will soon overtake smoking as the single largest cause of death in the country. For the first time since the Industrial Revolution, the life expectancy of the average American is declining, despite all our medical and public health advances. This is a very sobering thought, and it is directly related to the increasing incidence of obesity. Obesity will take nine years off the life of the average person, and obesity in adolescents creates the same risk of premature death as heavy smoking.

Have no doubt: Diabesity is not a genetic disorder. It is a direct outcome of dietary and lifestyle factors turning on all the wrong genes.

**Myth 2: Diabetes Is Not Reversible**

Most of us are taught that diabetes is not reversible and we are destined to suffer progressive decline in function, including heart disease, kidney failure, blindness, amputation, strokes, and dementia without any hope of reversing or preventing these conditions. The only treatment options are to limit the consequences and reduce the complications. This is the best we can achieve.

However, there is clear evidence from the scientific literature that diabetes is reversible, especially if it is caught in the early stages and treated with an aggressive approach to lifestyle intervention and nutritional support, and occasionally with medications.

In a report in the *New England Journal of Medicine*, Walter Willett, MD, PhD, and his colleagues from the Harvard School of Public Health demonstrated that 91 percent of all type 2 diabetes could be prevented through intensive changes in diet, lifestyle, and nutritional supplementation. But to achieve those results, we need to treat the condition as early as possible. Most cases of diabetes can be reversed as well as prevented. But remember: “An ounce of prevention is worth a pound of cure.”

It is extremely important to diagnose type 2 diabetes early. In a recent study, anyone with a fasting blood sugar of more than 87 mg/dl was at increased risk of diabetes. The lowest-risk group had a blood sugar less than 81 mg/dl. Yet most doctors are not concerned until the blood sugar is more than 110 mg/dl or, worse, 126 mg/dl, which is the level that technically constitutes diabetes. Diagnosing problems with insulin resistance and blood sugar control at this point is too late in the game, especially since we know that problems occur so much earlier.

There is a point of no return in type 2 diabetes when, after many years of poorly treated diabetes, your pancreas just cannot bounce back and control your blood sugar. This happens rarely and only in those who have had poorly treated diabetes for decades.

This pancreatic damage would be completely avoided if all doctors would aggressively diagnose prediabetes decades before diabetes occurs, and before any damage is done to your body. I recommend early testing for anyone who has a family history of type 2 diabetes, central abdominal weight gain, or abnormal cholesterol. Don’t wait until your sugar is high.

Abnormal insulin and blood sugar should be addressed as early as possible on the continuum to achieve optimal results.
And one final note: If you have already reached the stage at which pancreatic damage has occurred, you should know that it has been shown that extraordinary gains in health and vitality can still be made if the problem is treated properly using a whole-systems approach like the one outlined in this program. Remember: Diabetes can be reversed. xxvi

Myth 3: You Don’t Get into Trouble with Prediabetes Until You Actually Have Full-Blown Diabetes

Many believe that prediabetes doesn’t become a problem until you actually get full-blown diabetes, that somehow it is just a warning sign. Nothing could be further from the truth. Prediabetes is NOT “pre” anything. It is just an earlier stage of diabesity that carries with it nearly all the risks of diabetes, such as heart disease, stroke, dementia, and cancer. The only things not usually associated with “prediabetes” are what we call the microvascular complications (small vessels), such as eye damage, kidney damage (although we are learning that even prediabetes can damage the kidneys), and nerve damage.

Many studies confirm this, and show that with increasing insulin resistance and prediabetes the risk of these complications increases in a steady fashion. One study found that about two-thirds of all patients coming into a hospital emergency room with heart attacks had prediabetes or diabetes that was not even diagnosed. xxvii Another important study found that the risk of heart attack increases with any increase in average blood sugar (measured by hemoglobin A1c), even for those who don’t have diabetes. xxviii

Another recent study in the journal Lancet of over 6000 people found that measuring insulin resistance, not just blood sugar, could help predict the development of diabetes as much as six year before diagnosis. xxix

Prediabetes even causes “predementia” or mild cognitive impairment—think of it as early Alzheimer’s. xxx And if that isn’t bad enough, prediabetes can also cause impotence in men and infertility in women (often associated with polycystic ovarian syndrome).

So if your doctor has diagnosed you with prediabetes or metabolic syndrome, don’t think that you might be at risk for something “in the future,” such as high cholesterol. The problems are happening right now. That is why I called this whole set of problems “diabesity”—to get away from the sense that you only run into problems if you have full-blown diabetes.

Myth 4: Once You Start on Insulin There Is No Going Back

Insulin treatment in diabetes is a slippery slope, because increased insulin dosage often leads to increased weight gain, higher blood pressure, and elevated cholesterol. Blood sugar improves, but overall risk of heart disease does not. That is why insulin should be the last resort in managing blood sugar and diabetes. And if you have to be on insulin, get on the lowest dose possible. Eating whole, real, fresh food and exercising vigorously will keep your blood sugar low and your insulin needs down.

The good news is that, with aggressive lifestyle intervention and dietary change, you can reverse diabetes and stop insulin therapy under your doctor’s supervision. This has been shown in research trials. xxxi Many of my patients and my colleagues’ patients have successfully gotten off insulin.

Often these types of results are not seen in conventional medical care, because the type of diet and lifestyle intervention advice is not adequate or properly designed to create a reversal of diabetes. With the right treatment
approach, based on Functional medicine, and by understanding and treating ALL the underlying causes of diabetes, the possibility exists of not only eliminating insulin but also reversing diabetes and insulin resistance.

Myth 5: Lowering Blood Sugar with Medication Prevents Death and Heart Attacks in Diabetics

It is clear that elevated blood sugar causes small vessel injury leading to blindness, kidney damage, nerve damage, and cataracts. However, the major causes of death in diabetics are heart disease, heart attacks, and strokes, not kidney, nerve, or eye damage. Unfortunately, lowering blood sugar with medications and insulin does not reduce your risk of heart attack and death, as our discussion of the ACCORD study has already shown.xxxii

This is a shocking finding to most, but makes complete sense to anyone who understands the underlying causes of diabetes: increased insulin resistance and higher blood insulin that lead to serious downstream metabolic effects including inflammation, oxidative stress, and mitochondrial injury. Those underlying problems lead to all the signs and symptoms we see in people with diabetes, including high blood pressure, high cholesterol with low HDL and high triglycerides, and elevated C-reactive protein (a marker of inflammation).

Lowering your blood sugar without addressing the underlying causes gives you a false sense of security that you are doing something good to prevent heart attacks and early death. Unfortunately, the evidence shows otherwise.

Myth 6: Surgery and Angioplasty Are Good Treatments for Diabetics with Heart Disease

A recent study in the *New England Journal of Medicine* showed that surgery and angioplasty for diabetics with heart disease is no better than medication, but has higher risks.xxxiii In fact, a number of studies have shown that lifestyle is dramatically more effective than medication in reducing both blood sugar and the other risks that come along with heart disease, including high cholesterol, high blood pressure, and inflammation. Even though surgery and angioplasty are reimbursed by insurance companies, they have not been proven effective.

Unfortunately, treatments that are effective, namely intensive lifestyle interventions including better diet, more exercise, stress reduction, and treatment of environmental toxicity, are not reimbursed. So doctors can’t provide the best available treatment even if they want to. This must change.

At an American Diabetes Association convention in New York City, the main booth in the convention hall, front and center, presented the surgical treatment of diabetes with gastric bypass surgery. They claimed to have a breakthrough “cure” for diabetes. But I have seen many patients who gained back all the weight they lost, and more, after gastric bypass! Surgery is not the answer.

Myth 7: Weight Loss Is Necessary for Reversal of Diabetes

Clearly weight loss is critical and important for obtaining optimal health. However, what

---

We should be treating elevated insulin levels, not just elevated blood sugar levels.

---

*The Diabesity Prescription*
we are finding in bariatric patients who have surgery and gastric bypass is that, even without significant weight loss, a dramatic change in diet in a short period of time creates dramatic metabolic changes. All the parameters that we thought were related to obesity, such as high blood sugar, high cholesterol, high blood pressure, inflammation, and clotting, are dramatically reduced even without significant weight loss.

The key message here is that food is not just calories, it is also information, and different information put into the system in a very short time reverses a whole series of metabolic issues and diabetes without significant weight loss.

The converse is also true, as we learned in a study in the New England Journal of Medicine that discussed a woman who had 20 kilos of abdominal fat removed by liposuction. She showed no changes in any of her metabolic markers of obesity, including blood sugar, cholesterol, blood pressure, and inflammation markers, despite losing 20 kilos (more than 40 pounds) of weight through liposuction.

I will explain the whole concept of food as information (which is the premise of nutrigenomics) later in this program. For now, suffice it to say that our simplistic notions of weight loss and obesity being linked to diabetes and insulin resistance must be challenged. The take-home message is that the quality of the food we put in our bodies is what drives our gene function and metabolism. Changing the quality of your food and eating powerful, gene-altering, whole, real, fresh food that you cook yourself can rapidly change your biology. Eventually you may lose weight, but it will be by getting your systems in balance, not by starving yourself.

Now that we have debunked the myths that drive our current, ineffective model for understanding and treating diabesity, let's look at the real reason we get sick and the best ways we can heal.
PART II:

The Seven Keys to Treating the REAL Causes of Diabesity
Conventionally we think of diabesity as a result of either poor genes alone or poor genes combined with a bad diet and lack of exercise. However, recent research has pointed to new and important causes of diabesity. These include nutritional deficiencies, hormonal imbalances, inflammation, food allergens, chronic infections, gut-derived toxins, environmental toxins, free radicals, defects in energy metabolism, and chronic stress. These factors all interact in a dynamic network of dysfunction that leads to what we call diabesity.

We will now explore briefly the major systems in the body and how each of these systems contributes in small or large part to the development of diabesity. To effectively treat diabesity you must correct the fundamental imbalances in your biochemistry, physiology, and gene expression. This is best done by systematically optimizing the seven keys to UltraWellness. It is a very effective way to treat and reverse diabesity and all its potential complications.

Key #1: Optimize Nutrition

The leading cause of diabesity: Our SAD (Standard American) Diet

Our poor-quality diet is the main factor driving our epidemic of diabesity. This nutrient-poor, calorie-rich diet has led to a nation of overfed but undernourished people. Since there are so few nutrients in our processed, agribusiness-farmed diet, we are now seeing an epidemic of nutritional deficiencies that promote the development of diabetes, including deficiencies in vitamin D, magnesium, chromium, zinc, and antioxidants. xxxvii, xxxviii

Whole, real, fresh food that you have to cook is the most potent medicine you can use to prevent, treat, and reverse diabesity.

First we will look at some of the major dietary shifts that have driven the diabesity epidemic. Then I will explain the exciting new science of nutrigenomics, which promises to help us cure the problem.

#1 Nutritional Change That Leads to Diabesity: Sugar in All Its Forms

Our diet has changed dramatically within the last 100 years. It has changed even more dramatically in the last 30-50 years. The biggest change has been our increased sugar consumption. Our Paleolithic ancestors ate 22 teaspoons of sugar per year xxxix. At the beginning of 1800s the average person ate 10 pounds a year. And now the average American eats 150-180 pounds per year. That’s more than half a pound of sugar per person per day!

In the last 30 years, the sugar calories we consume from high-fructose corn syrup have increased from 0 percent to 66 percent, mostly in the form of liquid calories from soft drinks.
and other sweetened beverages. And liquid calories in the form of sugar pile on the pounds much more than do solid calories. In fact, Dr. Walter Willett from the Harvard School of Public Health stated, at a recent White House meeting on Prevention and Wellness at which I also spoke, that the two most important factors driving our obesity epidemic are sugar-sweetened drinks and the number of hours of television watched per day. These correlate more with obesity than do any other factors in the research.

We need to stop eating so much sugar. We also need to stop watching so much television and spending so much time in front of computer screens. It’s killing us.

#2 Nutritional Change That Leads to Diabesity: Our Low-fiber Diet

Along with our increased sugar consumption, our fiber consumption has decreased tremendously. Our Paleolithic ancestors ate 100 grams of fiber per day. We now eat less than 8 grams per day.

Fiber is important because it slows the absorption of sugar into the bloodstream from our gut, and reduces cholesterol. The fiber in our diet comes predominantly from plant foods such as fruits and vegetables, including nuts, seeds, whole grains, and beans. Those who eat a refined, processed diet that comes from boxes, packages, or cans typically get less fiber than those who eat whole, real foods.

The lack of fiber in our diet has enormous implications for our health. It causes heart disease, diabetes, obesity, cancers, and many other chronic diseases. In fact, studies show that the addition of high levels of fiber to the diet is as effective as diabetes medication, without any of the side effects.

#3 Nutritional Change That Leads to Diabesity: An Epidemic of Nutritional Deficiencies

Our nutrient-poor, calorie-rich diet makes us overfed and undernourished. Oddly, we eat more than we ever have yet are nutritionally depleted. As a result, in America we now see chronic epidemics of nutritional deficiency that cause diabesity and many other chronic diseases.

A number of nutrients are particularly important in the prevention and treatment of diabesity, including vitamin D, chromium, magnesium, zinc, biotin, omega 3 fats, and antioxidants such as alpha lipoic acid. These are necessary for proper control and balance of insulin and blood sugar. When these are deficient, our biochemical machinery slows down and grinds to a halt.

Later in this program I will tell you how you can get enough of these critical vitamins and minerals to help you overcome your problems with diabesity.

The Nutritional Solution: Nutrigenomics—Food Is Information, or “How to Talk to Your Genes”

What you put on your fork is the most powerful medicine you have to correct the fundamental underlying causes of chronic disease and diabesity. That is true for one simple reason: Food is more than calories; it is information.

We generally think of food as a way to get energy, a means to feed our bodies the fuel they need to function. However, new science has shown that food literally speaks to our genes. The information your body receives from the foods you eat turns your genes on and off. This provides your body with instructions on how to control your metabolism from
moment to moment and day to day, every time you take a bite of food. This is the science of nutrigenomics, or how food talks to your genes, and it is the nutritional approach that underlies The Diabesity Prescription.

To illustrate how powerful this approach is, let me share a remarkable study that shows how quickly and powerfully the quality of the food you eat affects your genes, independent of calories, carbs, protein, fat, or fiber. This study focused on people with metabolic syndrome, or prediabetes. They were divided into two groups. Each group was fed exactly the same amount of calories, with equivalent amounts of protein, fat, carbohydrates, and fiber, for 12 weeks. The only difference between the groups was this: One group was fed whole-kernel rye bread and rye pasta; the other group was fed oats, wheat, and potatoes as its source of carbohydrates. After 12 weeks, the researchers performed a subcutaneous fat biopsy, looked at gene expression, and gave the participants in the study a glucose challenge test to assess how their blood sugar and insulin were affected by these dietary changes.

The results were groundbreaking. Remarkably, people in the group that ate rye had smaller fat cells, and they had down-regulated a very important enzyme called hormone-sensitive lipase. This is the most important enzyme that controls insulin function and cholesterol metabolism, and thus has a major impact on your risk of heart disease.

Even more amazing was how much their genes changed in such a short time. Dozens of genes that made participants fat and diabetic were turned off and dozens of genes that would help them become healthy and thin were turned on. Seventy-one genes that promoted insulin resistance and cell death were turned off in the rye group. The foods they ate beneficially affected their genes, turning off the very genes that predisposed them to diabesity.

On the other hand, 62 genes that promote diabesity were turned on in the group that ate oats, wheat, and potatoes, and the turning-on or up-regulation of these genes led to increased stress molecules, increased inflammation, and increased oxidative stress or free radicals.

Remember, these two groups ate exactly the same number of calories and exactly the same percentage of fat, protein, carbohydrate, and fiber. The only difference was in the type of carbohydrates they consumed, not the amount. This one study (among many others that point to the same conclusions) illustrates that food is not just calories...

Food is information.

If you want to turn off the genes that lead to diabesity and turn on the genes that lead to health, the key is the quality and type of food you eat, not necessarily the calories you consume or the ratio of protein to fat to carbohydrate in your diet.

You need to put your genes on a diet. As one of the leading obesity researchers from Harvard Medical said, “Molecular pathways involved in hormone action [like insulin resistance] have been the target of a multibillion-dollar pharmaceutical research efforts. However, many of these pathways may normally be under dietary regulation. The results of the present study emphasize the age-old wisdom to ‘use food as medicine’—in this case, for the targeted prevention and treatment of obesity, diabetes, and heart disease.”

Shifting from a nutrient-poor diet to a nutrient-dense diet that is abundant in plant foods such as fruits, vegetables, nuts, seeds, beans, and whole grains improves the function of
hundreds of genes that control insulin function and obesity. An optimal diet to prevent and treat diabesity also includes healthy fats such as olive oil, nuts, avocados, and omega-3 fats, along with modest amounts of lean animal protein. This is commonly known as a Mediterranean diet. It is a diet of whole, real, fresh food. It is a diet of food you have to prepare and cook from the raw materials of nature. This way of eating has been shown to have a dramatic impact and to prevent and even reverse diabesity. It has broad-ranging benefits for our health, and beneficially affects our entire physiology, reducing inflammation, boosting detoxification, balancing hormones, and providing powerful antioxidant protection.

In addition to these dietary changes, you also need a full complement of vitamins and minerals, and you may need to individually correct specific deficiencies that lead to diabesity, including deficiencies in chromium, biotin, vitamin D, magnesium, zinc, alpha lipoic acid, and omega-3 fats. Supplementing with nutrients is necessary because modern food-growing and processing practices have greatly diminished the quality of our diet.

Even with a perfect diet, our depleted soils, the storage and transportation of our food, genetic alterations of traditional heirloom species, and the increased stress and nutritional demands resulting from a toxic environment combine to make it impossible for us to get the vitamins and minerals we need to function optimally solely from the foods we eat. The evidence shows that we cannot get away from the need for nutritional supplements.

In the treatment plan in this program, I will outline precisely how you need to eat and what supplements you need to take to reverse diabesity. For now, just keep in mind that our common ideas about food being no more than a source of energy are very limited. Nutrigenomics and its role in diabesity is the future of medicine. It will help us both understand and successfully treat this burdensome condition that affects more than a billion people worldwide.

What you put on your fork is the most powerful medicine you have to correct the underlying causes of chronic disease and diabesity.

In addition to these dietary changes, you also need a full complement of vitamins and minerals, and you may need to individually correct specific deficiencies that lead to diabesity, including deficiencies in chromium, biotin, vitamin D, magnesium, zinc, alpha lipoic acid, and omega-3 fats. Supplementing with nutrients is necessary because modern food-growing and processing practices have greatly diminished the quality of our diet.

Even with a perfect diet, our depleted soils, the storage and transportation of our food, genetic alterations of traditional heirloom species, and the increased stress and nutritional demands resulting from a toxic environment combine to make it impossible for us to get the vitamins and minerals we need to function optimally solely from the foods we eat. The evidence shows that we cannot get away from the need for nutritional supplements.

In the treatment plan in this program, I will outline precisely how you need to eat and what supplements you need to take to reverse diabesity. For now, just keep in mind that our common ideas about food being no more than a source of energy are very limited. Nutrigenomics and its role in diabesity is the future of medicine. It will help us both understand and successfully treat this burdensome condition that affects more than a billion people worldwide.

The Ecology of Eating: The Power of the Fork

“Treat the whole problem of health in soil, plant, animal, and man as one great subject.”

—Sir Albert Howard, The Soil and Health

Our most powerful tool to reverse the global epidemic of chronic disease, heal the environment, reform politics, and revive economies is the fork. What we put on it has tremendous implications not just for our waistlines but also for the planet and our global
economy. What we do to our bodies, we do to the planet, and what we do to the planet, we
do to our bodies.

We are now suffering from an invisible epidemic of global sickness—162 million
Americans have chronic diseases, 29 million people across the globe die each year from
preventable lifestyle diseases, and 1 billion people are now overweight, surpassing the number
of those who are malnourished. The harm we do to our bodies is linked in a complex web
to the harm we do to the planet; to the degradation of our environment, air, and water; and to
the future we are stealing from our children. The next time you pick up your fork, think of the
personal and global impact of what you put on it.

I am not a vegetarian, but I would suggest that the cow is the 21st-century equivalent
of the atom bomb, threatening our survival. A bold statement to be sure, but the cow is
the nexus at which food, the health of the human species, and the health of the planet are
inextricably linked.

When we bite down on a hamburger or T-bone steak, we think we are eating a cow. But
we are not. Our modern cow has been transformed into a by-product of corn, and not just
any corn, but a mountain of corn that has been genetically altered to be resistant to pesticides
and herbicides and grown in vast monocultures. This corn is high in sugar, starch, and health-
destroying polyunsaturated fats. It is “Frankencorn,” and it is hidden not only in the meat we
eat but in every processed food product in the country. It blankets the nutritional landscape of
America (and increasingly the world), driving the epidemics of obesity, heart disease, diabetes,
and cancer.

Ten billion bushels of corn are grown in America each year, most of which we don’t
eat in a form we can recognize as corn. Sixty percent of our corn production is used to feed
cows and other livestock. It is also used to fuel our cars, and it is the major ingredient in
processed and fast food. Gasoline in the form of biofuel, meat, and junk food alike are all by-
products of corn.

The Native Americans gave corn to pilgrims so they could survive on this new continent,
and now, ironically, it will be our demise.

But the problems with the cow don’t end there. The bulk of oil and fossil fuels we
consume are not used by the cars we drive but by the food we eat. One-fifth of the oil
consumption in the world is for food production and transport. And it takes sixteen times
more energy to produce six ounces of meat than to produce a cup of broccoli, a cup of
eggplant, a cup of cauliflower, and a cup of rice.

Eating a meal of beef also produces twenty-four times more greenhouse gases than do
carbon emissions because of the methane and nitric oxide produced by cow flatulence. Cows
are ruminants meant to graze on grasses, and the bacteria in their stomachs cannot digest
grains (corn). Grain simply sits in a cow’s stomach and ferments. The gas produced by the
fermentation of corn in cows’ stomachs is one of the largest contributors to global warming.

—continued on next page
Agriculture is responsible for an estimated 14 percent of the world’s greenhouse gases. A significant portion of these emissions come from methane, which, in terms of its contribution to global warming, is 23 times more powerful than carbon dioxide. Cattle rearing generates more global warming greenhouse gases, as measured in CO2 equivalents, than does transportation.\textsuperscript{lxvi}

So you see, what you put on your fork is more important than the car you drive, for both your health and the environment.

How could it be that the price of gas and the price of our food are correlated? As gas prices rise, so do food prices. This is largely due to confined animal feeding operations (CAFOs), which are the factories that produce our meat. Cows raised in CAFOs are “grown” on a bed of corn, and the corn they eat is grown on petrochemical and pharmaceutical farms. The fertilizers, pesticides, and herbicides used on these farms are generally oil by-products. The more oil that’s used, both by way of gasoline-driven farm equipment needed to process such massive monoculture crops and the increased use of these chemical inputs, the more expensive the meat raised on CAFOs becomes. These factory farms are producing “Frankenmeat” that destroys our bodies and degrades our environment at an ever-increasing cost. We must ask ourselves every time we shop, “What is the real cost of cheap food?”

Industrial food production doesn’t just require more energy and contribute to global warming. It also exposes us to harm because the foods we eat contain altered proteins, fats, and sugars, as well as unhealthy antibiotics and hormones.

Pharmaceuticals have become essential to our “modern” food production. Of the 24 million pounds of antibiotics produced each year in this country, 19 million are put in factory-farmed animals’ feed to prevent infection (which results from overcrowding) and to prevent cows’ stomachs from exploding as a result of the excess gas produced by fermenting corn in their rumens.

The volume of antibiotics used in food production drives the development of antibiotic-resistant bacteria, or “Frankenbugs.” These resistant bacteria spread to humans. Methicillin-resistant \textit{Staphylococcus aureus} (MRSA), the killer “staph” bacteria, kills more Americans each year than does AIDS. It is transferred from pigs to pig farmers. Farmers then spread this life-threatening infection when they visit their relatives in hospitals.

Hormones in our food supply create similarly severe problems. They are typically used to promote rapid growth of our feed animals. They also promote rapid growth of little girls’ breasts, which is why we see eight-year-old girls going through puberty, and an increase in reproductive cancers such as breast and prostate cancer.

The truth is that we consume far more animal products than our bodies need. In the \textit{China Study}, Colin Campbell from Cornell University showed that animal protein might dramatically increase the risk of cancer.\textsuperscript{lxvii} Health experts recommend a maximum consumption of eight ounces of animal protein a week, yet we eat about eight ounces a day. If you were to take the 10 billion animals that are produced on factory farms every year for our
consumption and line them end to end between the earth and the moon, they would go to the moon and back five times. We use one-third of the earth’s surface—70 percent of the earth’s agricultural land—to “produce” these animals.lxxvii

As problematic as it is, the modern cow is still only one piece of the puzzle. The food industry comprises 17 percent of our economy and is controlled primarily by Archer Daniels Midland (ADM) and Cargill, the largest privately owned companies in the world. They are the creators of “Food Science,” Orwellian double-speak for “Frankenfoods.” Food used to just be food. Now what we eat is a by-product of industrial manufacturing. Our $288 billion Farm Bill, and the United States Department of Agriculture (USDA) policies associated with it, fuel the growth of the processed-food industry that drives the epidemics of obesity and chronic disease that threaten the future of our children and our society.

Broccoli, peaches, almonds, kidney beans, and other whole foods don’t need a food ingredient label or bar code, but for some reason these foods—the foods we co-evolved with over millennia—had to be “improved” by Food Science. As a result, the processed-food industry and industrial agriculture has changed our diet, decade by decade, not by accident but by intention.

We need to resize our thinking when it comes to eating plants versus animals. And we need to completely reassess our perception of processed foods. Animal foods, if eaten at all, should be a condiment, not the center of the meal. Processed foods typically shouldn’t be eaten. If it comes out of a package or a can, it isn’t real food.

That we need nutritionists and doctors to teach us how to eat is a sad reflection of the state of society. These are things our grandparents knew without thinking twice about them. What foods to eat, how to prepare them, and an understanding of why you should share them in family and community have been embedded in cultural traditions since the dawn of human society. Now most Americans don’t know how to cook or say they don’t have enough time to cook, yet Americans spend more time watching cooking shows on television than they actually do cooking themselves.

One hundred years ago all we ate was local, organic food; grass-fed, real, whole food. There were no fast-food restaurants, there was no junk food, there was no frozen food—there was just what your mother or grandmother made. Most meals were eaten at home. Now, one in five breakfasts is from McDonald’s, and 50 percent of meals are eaten outside the home.lxxix

The sustainability of our planet, our health, and our food supply are inextricably linked. The ecology of eating—the importance of what you put on your fork—has never been more critical to our survival as a nation or as a species. The earth will survive our self-destruction. But we may not.

At a recent National Institutes of Medicine think tank on “whole systems research,” at which I participated, the thinking centered on complexity, resilience, and adaptability in biological systems as core principles of health. In heart failure, if you simplify your heart...
rhythm with anti-arrhythmic medication, you die. Reduce sympathetic tone and increase the complexity of your heart rate with beta-blockers, and you live. This paradox is explained by complexity. It is the complexity of the system that creates health and sustainability.

The same principle holds true for our food system and the way it impacts our biology. Our monoculture, mono-diet of processed food derived from corn and hydrogenated soy oil reduces our personal biological complexity as it reduces the biodiversity of our planet. This is the very essence of disease.

Ultimately, there is no confusion about what constitutes good nutrition, despite the “conflicting” scientific studies and media reports designed to confound rather than enlighten. If we were to gather the world’s top nutrition scientists and experts (free from food-industry influence), there would be very little debate about the essential properties of good nutrition. Unfortunately, most doctors are nutritionally illiterate. And worse, they don’t know how to use the most powerful medicine available to them: food.

Common sense and scientific research lead us to the conclusion that if we want healthy bodies we must put the right raw materials in them: real; whole; local; fresh; unadulterated; unprocessed; and chemical-, hormone-, and antibiotic-free food. There is no role for foreign molecules such as trans fats and high-fructose corn syrup, or for industrially developed and processed food that interferes with our biology at every level.

That is why I believe the most important and the most powerful tool you have to change your health and the world is your fork. Imagine an experiment—let’s call it a celebration: We call upon the people of the world to join together and celebrate food for one week. For one week we all eat breakfast and dinner at home with our families or friends. For one week we all eat only real, whole, fresh food. Imagine for a moment the power of the fork to change the world.
CHAPTER 6

Key #2: Balance Your Hormones

To be healthy you must balance your hormones, including insulin, thyroid, your sex hormones, and your adrenal or stress hormones. This program focuses on treating the underlying causes of insulin imbalance, because that is the driving factor in our diabesity epidemic. Insulin is a hormone, not unlike many other hormones in your body. Balancing ALL of your hormones is important if you want to heal, because they are all interconnected in one big, dynamic hormonal web; they all interact with each other like a big musical symphony. When this symphony is playing out of tune, problems start.

To overcome diabesity you must identify and treat thyroid imbalances; overactive stress hormones and their effect on insulin, blood sugar, and diabetes; and the effects of insulin imbalance on your sex hormones. So let’s look at how each of these major hormonal imbalances can be contributing factors in diabesity.

**Thyroid Hormone: Your Master Metabolism Hormone**

Undiagnosed thyroid disease worsens insulin resistance, and insulin resistance worsens thyroid function. Yet 50 percent of those with thyroid disease are undiagnosed. This disease affects one in five women and one in 10 men. Untreated thyroid disease can lead to increased insulin resistance, which leads to more weight gain and diabetes as well as elevated cholesterol. Your thyroid basically controls your metabolism. If it is working slowly, your metabolism will slow and diabesity may increase. I encourage you to read my program, *The UltraThyroid Solution* (http://diabesity.ultrawellness.com/thyroid), for more information on how to identify and treat thyroid disease.

**Stress Hormones: The Dangers of Chronic Stress**

Stress hormones also play a critical role in the creation and worsening of diabesity. Chronic stress increases the production of cortisol (the main stress hormone) by your adrenal glands. Chronically elevated cortisol causes weight gain around the middle, increased blood sugar and cholesterol, depression, and even dementia. Chronic stress promotes the accumulation of belly fat that we see so commonly in patients with insulin resistance or diabetes. Too much cortisol from stress also causes muscle loss, interferes with thyroid and growth hormones, and negatively impacts sleep, all of which leads to problems with weight gain. Sleep deprivation or impaired sleep, in turn, increases appetite and increases sugar cravings. In a study of healthy young men deprived of just 2 hours of sleep, their blood levels of ghrelin (the hunger hormone) increased and PYY (the brake on appetite) decreased. Getting enough quality sleep is important in the treatment of diabesity.

But even more important is decreasing our stress levels.
The effects of stress are shaped by our thoughts, attitudes, and beliefs. We can change what we think and believe, and we can reduce the impact of daily stress on our lives as a result.

We will always have intermittent acute stressors. That can’t be avoided. But it is not the acute stress that comes and goes that causes problems with your health. What has such a dramatic impact on diabesity as well as so many other chronic illnesses is the chronic unremitting stress that is created, in part, by your relationship to your life, thoughts, and beliefs.

You can learn to have a different relationship with people and events in your life so you don’t experience that chronic stress. You will learn more about all the effects of stress as well as how to reduce your stress levels later in this program. You can also use my audio CD program, UltraCalm (http://diabesity.ultrawellness.com/ultracalm) to help you reduce stress hormones and relieve chronic stress with a few simple tools.

Sex Hormones: Men Becoming Women and Women Becoming Men?

Too much insulin has a negative effect on your sex hormones. If you are a man, it makes you more like a woman, and if you are a woman, it makes you more like a man.

In those with diabesity, the sex hormones need to be evaluated and treated. Insulin resistance can be an unrecognized cause of infertility in women. This is often called polycystic ovarian syndrome. But it is not an ovarian problem. It is a nutritional problem. It is caused by our toxic diet and toxic environment. Insulin resistance also leads to hair growth on the face and body and a loss of hair on the head in women. Many women also get acne and irregular menstrual cycles.

In men, insulin resistance drives down testosterone levels. Sex drive and sexual function are significantly impaired as a result. Low testosterone also leads to other problems, such as decreased muscle mass and more fat deposition in the belly, seen in all those big guts in men over 40 years old. Over time, diabetic men become more like women because insulin results in a higher estrogen level, leading to soft skin; increased breast size; and loss of hair on the legs, arms, and chest.

All of these problems are related to increased insulin resistance, and they are completely reversible through the lifestyle and treatment program I’m going to outline for you below.
Hidden or silent inflammation is a final common pathway or mechanism in most chronic diseases, including heart disease, cancer, Alzheimer’s, and diabesity. Mounting evidence underscores the critical role that inflammation plays in the development and continuation of diabesity. In fact, those who have a high C-reactive protein (a marker of systemic inflammation) blood level have a 1700 percent increased probability of developing diabetes. In medicine, 20 or 30 percent increases are considered significant; a 17-fold or 1700 percent increase should be headline news.

The increased rate of chronic illness we see in our society is a direct outcome of increased rates of inflammation. There is no longer any debate about this in medicine. The important questions are, “What’s causing the inflammation and how do we treat it most effectively?”

I can assure you that the answer is not simply taking more aspirin or Advil. That’s like taking painkillers while a horse is standing on your foot. The treatment is getting the horse off your foot—and that means finding the underlying causes of inflammation and eliminating them.

What Causes Inflammation?

If inflammation is a root cause or a major factor in the development and worsening of diabesity, then what triggers this inflammation? A number of recent studies have pointed to a few basic causes that we can identify and treat directly.

Sugar, refined carbohydrates, artificial sweeteners, food allergies and sensitivities, chronic infections, toxins, stress, and a sedentary lifestyle all promote inflammation. Each of these underlying causes of inflammation has to be addressed if diabesity is to be treated effectively. Of course, which of these factors is the source of inflammation in any particular person may be different. For some it is too much sugar, for others it is chronic infections. You must locate all the sources of inflammation in your life and eliminate them if you want to overcome your diabesity.

So let’s review the top six causes of inflammation in our society.

#1 Cause of Inflammation: Dietary Sugars, Refined Flours, and Artificial Sweeteners

Dietary sugars and refined flours are the single biggest triggers of inflammation in our body. They cause insulin levels to spike and start a cascade of biochemical reactions that turn on genes that lead to chronic and persistent inflammation. This begins a downward spiral into more inflammation, more insulin resistance, and poorer blood sugar control, and ultimately leads to disease.

Lack of fiber and too many inflammatory omega-6 fats (soybean and corn oil) and not enough anti-inflammatory omega-3 fats (fish oil, flax seeds) also contribute to the development of systemic inflammation.
Artificial Sweeteners

For those of you who believe that artificial sweeteners are healthful substitutes for sugar, I would caution you to think again, particularly in light of an article in *Behavioral Neuroscience* that was published in 2008.\textsuperscript{lixviii}

In this study, rats were fed yogurt sweetened either with sugar or artificial sweetener for 14 days. The results were startling. The rats that ate the yogurt with artificial sweetener increased their total food consumption over the course of the experiment. That means they ate more food, though they were consuming fewer calories than the group that ate real sugar. Interestingly, their body fat increased, they gained weight, and their body temperature and thermogenesis (their underlying metabolic fire) decreased. That means their metabolism slowed down. In the long run, they consumed fewer calories but gained more weight with the consumption of artificial sweeteners.

So if you want to gain weight and crave more food, then include artificial sweeteners in your diet. If not, stay away. Artificial sweeteners alter your metabolism and trigger changes in your brain that slow down your ability to burn calories and increase your capacity to store fat. They also make you hungrier. Not a good idea for someone with diabesity.

#2 Cause of Inflammation: Food Sensitivities and Allergies

Food sensitivities and allergens also may play a role in the development of insulin resistance and diabesity. The allergies I am talking about here are not the typical hypersensitivity or acute allergies we are most familiar with, such as an allergy to peanuts. These are known as the IgE-mediated response, and while they can be deadly they are not a major contributor to insulin resistance.

However, delayed or hidden allergies, known as the IgG-mediated response, play a significant role. These sensitivities don’t cause typical allergic symptoms like hives or itchy eyes, but they do create systemic low-grade inflammation in the body.

In fact, in a study that compared obese children to-normal weight children, the obese children had three-fold higher levels of C-reactive protein (an indicator of inflammation) and a two-and-a-half-fold higher level of IgG antibodies for the 277 different foods tested.\textsuperscript{lxix} In addition, these obese children had thicker carotid arteries, which is a potent indication of cholesterol-laden plaque lining the arteries—a strong predictor of heart disease and stroke.

This is a highly significant study that needs to be replicated. It points to the previously unrecognized contribution of food allergies to weight gain and insulin resistance. Anything that drives inflammation, including food allergens, can cause insulin resistance.
The Special Case of Gluten

Another growing problem is gluten intolerance or celiac disease, which triggers severe inflammation throughout the body and has been linked to autoimmune diseases, mood disorders, cancer, and more. In a recent study comparing blood samples taken 50 years ago from 10,000 people to samples taken recently from 10,000 people, researchers found something quite remarkable. There has been a 400 percent increase in celiac disease over the last 50 years.\textsuperscript{xxv}

The hybridization of wheat grown in this country has changed the quality and type of proteins in wheat, creating a much higher gluten content. Our bread is not what it used to be. It is more of a Frankenfood! Combine that with the damage our guts have suffered from our diet, environment, lifestyle, and medication use, and you have the perfect formula for gluten intolerance. This super gluten crosses our leaky guts and gets exposed to our immune system. Our immune system reacts as if gluten was something foreign and sets off the fires of inflammation in an attempt to eliminate it. However, this inflammation is not selective, so it begins to attack our cells—leading to diabesity and other inflammatory diseases.

In a major study in the \textit{Journal of the American Medical Association}, hidden gluten sensitivity, even without full-blown celiac disease, was shown to increase risk of death by 35 to 75 percent, mostly by causing heart disease and cancer.\textsuperscript{xxxi} So this is a very serious problem.

Damage to the gastrointestinal tract from overuse of antibiotics, anti-inflammatory drugs like Advil or Aleve, and acid-blocking drugs like Prilosec or Nexium, combined with our low-fiber, high-sugar diet, leads to the development of celiac disease and gluten intolerance or sensitivity, and the resultant inflammation. That is why elimination of gluten and food allergens or sensitivities can be a powerful way to prevent and reverse diabesity and so many other chronic diseases. Eliminating these allergens is a central part of this program.

#3 Cause of Inflammation: Chronic Hidden Infections

Chronic infections can also trigger inflammation and cause persistent weight gain. New studies show that chronic infections, such as adenovirus, may be linked to obesity and insulin resistance.\textsuperscript{xxxi} These can be identified and treated. You can also boost your immune system in order to suppress and control these latent infections.

#4 Cause of Inflammation: Toxins

Toxins also play a large role in inflammation, and can lead to insulin resistance and diabesity, among other things. The increasing load of persistent organic pollutants (like PCBs and pesticides) and heavy metals (such as arsenic, mercury, and lead) has been linked to both diabetes and insulin resistance.\textsuperscript{xxxi} The link between toxins and diabesity\textsuperscript{xxxi} will be discussed further under Key #5: Enhance Detoxification.

#5 Cause of Inflammation: Chronic Stress

Chronic stress is yet another cause of chronic inflammation in the body.\textsuperscript{xxv} That's one more reason for you to relax and learn how to calm
The Diabesity Prescription

your mind. We will discuss this under Key #7: Calm Your Mind.

#6 Cause of Inflammation: Sedentary Lifestyle

It’s hard to imagine that doing nothing can make you inflamed, but that is exactly what happens. Lack of regular exercise creates low-grade inflammation in the body. And regular exercise dramatically reduces inflammation. That is why exercise is so critical to the reversal and treatment of diabesity.

# 7 Cause of inflammation: Nutritional Deficiencies

Studies show that deficiencies in basic nutrients and antioxidants promote inflammation, and that simply taking a multivitamin and mineral supplement is as effective for lowering inflammation as is statin medication, with a lot less side expense and fewer side effects.

Locating and addressing each of the causes of inflammation in your life is essential not only for overcoming diabesity but also for addressing virtually every other health-related issue. There is no doubt about it: Inflammation is one of the common pathways to illness. Cooling of the fires is essential if you want to heal.
New and exciting evidence points to an unexpected source of metabolic problems and diabesity—a toxic digestive system. As I mentioned, our diet has changed dramatically in the last 10,000 years, and even more in the last 100 years with the industrialization of our food supply. This highly processed, high-sugar, high-fat, low-fiber diet has dramatically altered the bacteria that historically grew in our digestive tracts, and the change has not been good.

Think of your gut as one big ecosystem. It contains 500 species of bacteria that amount to three pounds of your total weight. There is more bacterial DNA than human DNA in your body. These bugs control digestion, metabolism, inflammation, and your risk of cancer. They produce vitamins and beneficial nutrients, and molecules that sustain your body and your ecosystem, through a symbiotic relationship with you.

These bacteria thrive on what you feed them. If you feed them whole, fresh, real foods, good bugs will grow. If you feed them junk, bad bugs will grow. And when the population of bugs changes, the bad bugs begin to produce nasty toxins. Instead of symbiosis—a mutually beneficial relationship between you and your bugs—you create dysbiosis—a harmful interaction between bugs and host.

The ecosystem in your gut must be healthy for you to be healthy. When unfriendly bacteria grow in there, the friendly bacteria are pushed out and a toxic environment develops in your gut. This toxic environment affects your body and your metabolism in surprising ways.

The process by which bad bugs in your gut produce toxins, which in turn trigger inflammation, insulin resistance, and weight gain, was described in a paper published in 2007 in *Diabetes Journal.* The study showed how *metabolic endotoxemia* (the production of toxins from bad bugs in your gut) initiates and promotes obesity and insulin resistance. The findings were striking.

In rats fed a high-fat, low-fiber diet, bad bugs took over in the gut. The bad bugs released bacterial toxins called *lipopolysaccharides* (LPS) into the blood stream through the gut. These toxins bind to immune cells (lymphocytes), creating inflammation. The white blood cells, aggravated by the bacterial toxins, produce an inflammatory molecule called *tumor necrosis factor alpha* (TNF-a). This molecule then sets into motion a well-described cascade of inflammation that causes insulin resistance. You know what happens from there: nothing good. The bottom line is this: the toxic bugs in your gut may make you fat and inflamed.

By fixing your gut you allow good bacteria (probiotics) to start living there again, thus reducing the inflammation from bad bugs. Improving the quality of your diet with whole, real, fresh, high-fiber foods can significantly reduce the burden of inflammation and the resulting weight gain, simply by supporting healthy flora in your intestine. Putting good bugs back into your gut, bugs like *Lactobacillus, Bifidobacterium,* and *E. coli,* will help cool the inflammation in your gut and help you shed pounds. Much has been written...
about the phenomenon of *micro obesity*, which is obesity caused by the wrong microbes in your gut. The mechanism that drives this weight gain is inflammation. The treatment is fixing your gut and keeping it healthy, which this program is designed to help you do.
Over the last few years, scientists have uncovered an unexpected fact: Toxins make you fat and cause diabetes. This should be headline news, but it isn’t because there are no drugs to treat it. Everyone is focused on lifestyle and calories in/calories out or medication for diabetes. But the scientific data tells us something else is contributing to our epidemic of diabesity. We have found that environmental toxins interfere with blood sugar and cholesterol metabolism, and cause insulin resistance.

The most recent example of how toxins make us fat is the dramatic increase in obesity in babies. In 2006, scientists at Harvard School of Public Health found that rates of obesity in infants less than six months old have risen 73 percent since 1980. This epidemic of obesity in six-month-olds is not related to lack of exercise or diet—after all, they are only drinking breast milk or formula. It is not because they don’t exercise enough or eat junk food. Babies live on breast milk or formula and love. They don’t say, “Hey mom, take me out for a 1200-calorie McDonald’s breakfast or a giant tub of buttered popcorn.” And you can’t point to watching too much television as a risk factor. So what’s the cause? It appears it may be the load of environmental toxins in their little bodies. The toxins make them fat.

Mounting evidence points to a unique and unappreciated trigger for obesity—exposure to small traces of environmental chemicals in the environment. The average newborn has 287 chemicals in the umbilical cord blood, 217 of which are neurotoxic. The chemicals these infants are exposed to include pesticides, phthalates, bisphenol A, flame retardants, and heavy metals such as mercury, lead, and arsenic. These chemicals have a broad range of negative effects on human biology. They damage the nervous system and increase the risk of cancer, and now it has been shown that they contribute to obesity.

A study from the Journal of the American Medical Association found that bisphenol A, a petrochemical that lines water bottles and canned food containers, increases a person’s risk of diabetes, heart disease, and abnormal liver function.

Data from the government’s National Health and Nutrition Examination Survey 1999-2002 found a very striking correlation between blood levels of six common persistent organic pollutants (petrochemical toxins) and diabetes. Those people who had the highest levels of pollutants in their blood had a dramatically higher risk of diabetes.

Studies of Air Force veterans of the Vietnam War found that those who had been exposed to Agent Orange (dioxin) had a much higher risk of diabetes.

This is not a fringe idea of radical environmentalists. The National Institutes of Health, the Food and Drug Administration, the Environmental Protection Agency, and the National Academy of Sciences recently convened to examine this new phenomenon of obesogens—toxins that cause obesity.

The old idea that weight gain is simply a matter of calories in, calories out is falling apart. New evidence shows that weight gain...
can occur in the absence of excess calorie intake. For example, in a recent study, rats given toxic chemicals gained weight and increased their fat storage without increased caloric intake or decreased exercise. In six months, these rats were 20 percent heavier and had 36 percent more body fat than rats unexposed to those chemicals.xcv

The key message here is that toxins interfere with and slow down metabolism, and contribute to weight gain and diabetes. A larger population study published in a recent paper in Environmental Health has confirmed this finding. In the study, higher levels of organochlorine pesticides were found in those who suffered from diabetes.xcvi

Heavy metals such as mercury, lead, and arsenic also cause diabesity. A recent paper in the Journal of the American Medical Association documented how arsenic exposure increases the risk of diabetes.xcxvii This opens a whole new area of potential treatment for diabetes and obesity. A comprehensive detoxification program for petrochemical and heavy metal toxins can be an effective addition to the treatment of diabesity.

In 2007 I published a paper called Systems Biology, Toxins, Obesity, and Functional Medicine that provides a detailed description of many of the mechanisms by which toxins cause obesity.xcviii One of the key mechanisms that leads to insulin resistance and diabesity is how toxins block the function of very important receptors on the nuclei of your cells. These receptors, called PPARs (peroxisome proliferator-activated receptors), are needed for optimal insulin function and blood sugar control.xcis Using new techniques of genetic and metabolic analysis, scientists have shown how toxins cause increases in glucose, cholesterol, and fatty liver. This is no longer something that can be ignored. Toxins make you fat and cause diabesity, and they must be addressed in any treatment program for diabesity.

To learn more, you can download my review paper mentioned above on how toxins cause diabesity at http://www.ultrawellness.com/about-us/for-professionals/scientific-articles. You will also learn how to enhance your body’s own detoxification systems in the treatment plan provided later in this program.
Among the most exciting and important findings in recent science is the discovery of how differences in our metabolism affect our risk for diabesity. Our metabolism is what turns calories and oxygen into the energy that fuels every cell of our body. This energy is made in little factories in our cells called mitochondria. People with diabesity don’t produce energy in their mitochondria as well as healthy people do.\(^{c1}\) And, surprisingly, thin and otherwise healthy first-degree relatives of diabetics have mitochondria that are 50 percent less active than those of people without a family history of diabetes.\(^{cii}\)

The good news is that there are ways to enhance and optimize mitochondrial function and boost energy production, and that doing these things can reverse diabetes and insulin resistance.

Unfortunately, your mitochondria are very sensitive to a variety of insults. The biggest problem is running too many calorie-rich, high-sugar, nutrient- and antioxidant-poor foods through our little energy factories. Toxins, infections, and anything causing inflammation further damage our mitochondria. All these stresses—poor diet, toxins, infections, allergies, and stress—lead to a process called oxidative stress or free radical production.

Many of you are aware that oxidation is the process by which an apple turns brown or a car rusts. What you may not know is that the same process causes skin wrinkling; aging; and, when it happens inside our bodies, damage to our cells and tissues. When unchecked, oxidative stress turns on genes that increase insulin resistance and inflammation, and reduce mitochondrial function and energy production in the body.

That is why reducing free radical activity and oxidative stress, and improving energy production in your cells, are important parts of treating diabesity. You can achieve these improvements by combining a whole-food-, nutrient-, phytonutrient-, and antioxidant-rich diet with supplemental antioxidants and other mitochondrial-boosting supplements, and with special types of exercise. All these things are essential features of The Diabesity Prescription.

If you have diabetes, or a family history of diabetes, exercise is especially important. In fact, your genetic predispositions toward reduced mitochondrial function can be overcome by exercise. I recommend including strength training and a special type of aerobic conditioning called HIT or high-intensity interval training. This combination has been shown to dramatically improve mitochondrial function, and leads to enhanced weight loss and improved cellular metabolism.\(^{ciii}\) I will explain more about how you can incorporate both forms of exercise into your daily life later in the program.

Newer treatments are also being developed to address mitochondrial dysfunction, including one based on resveratrol, the antioxidant compound in red grapes. The research on this powerful plant compound was done by a company called Sirtris Pharmaceuticals, which was recently bought by GlaxoSmithKline for $750 million with plans to develop a new...
Resveratrol affects mitochondrial health through its impact on a master class of genes called *sirtuins* that regulate insulin function and mitochondrial energy production. When these genes are turned on they basically reverse the aging process in mitochondria. The single most important biological phenomenon that causes aging is loss of the ability to produce energy in the mitochondria, resulting in the development of insulin resistance. In fact, the “disease” of aging is really a disease of accelerated insulin resistance. If we fix that, we can reverse the aging process. That is what resveratrol does. Working on the master mitochondrial control genes with these plant compounds has been shown to reverse diabetes and increase longevity.\(^\text{civ}\)

Calorie restriction also helps improve mitochondrial function, although it is hard to do. If you eat 30 percent fewer calories per day you will live 30 percent longer. This has been shown in excellent animal studies.\(^\text{cv}\) A group of brave souls have joined The Calorie Restriction Society in an effort to extend their lifespan. They do this by eating food high in nutrients but very low in calories. One man I met ate five pounds of celery for breakfast and a few pounds of tomatoes and cucumbers for lunch!

Most of us cannot do that. However, by modifying your lifestyle, using interval training and exercise, eating a nutrient-dense diet, and taking certain supplements, you can boost your mitochondrial function.\(^\text{cvi}\) I believe it is possible to achieve the same results as calorie restriction without starving yourself, and I will show you how to do it later in this program.
Stress makes you fat and contributes to the development of diabetes. When I worked in the emergency room, I frequently saw patients with high blood sugar. These people were not diabetic. Acute stress had caused their blood sugar to skyrocket. Doctors have long known there is a relationship between stress and blood sugar. What we now understand is that, in the face of chronic stress, our levels of insulin, cortisol, and inflammatory compounds called cytokines all increase. This drives the relentless metabolic dysfunction that leads to weight gain, insulin resistance, and ultimately diabetes. Put simply, chronic stress has an enormous impact on your weight and metabolism. It increases your risk of diabetes, makes you more insulin resistant, and makes you gain weight in a vicious cycle.

An increased stress response and the resultant high levels of cortisol (the main stress hormone that you learned about earlier in this program) damage your brain in other ways as well.

For example, it impairs your memory. Recent studies have shown that diabetics have a four-fold risk of developing Alzheimer’s, and patients with prediabetes or metabolic syndrome have a dramatically increased risk of predementia or mild cognitive impairment (MCI). This underscores the critical role of too much insulin in aging and dementia.

Chronic stress and the major stress hormone, cortisol, cause diabesity. The links between stress, weight gain, mental disorders, and blood sugar imbalances make it imperative that we manage stress as a critical component of obesity and diabetes treatment. An interesting study suggested one possible method to manage stress: Researchers found that mice bred to be obese and diabetic had improved metabolic function and lost weight when their adrenal glands (which produce cortisol) were cut out. However, cutting out your adrenal glands is probably not such a great strategy for weight loss.

But there are many ways to effectively reduce your stress response while retaining your adrenal glands. You can try relaxation therapies, meditation, breathing exercises, yoga, group support, massage, exercise, saunas, dancing, laughing, and much more.

It takes work to relax. It is not something that you can bring about just by sitting in front of the TV with a beer and a bowl of popcorn. Nonetheless, actively engaging your relaxation response is a critical part of the process of healing diabesity. Find what is appropriate for you. Find something (or even a few things) you enjoy and do it or them every day. Relaxing is as important as breathing, sleeping, or eating. Not doing it will kill you. If you think you don’t have time to relax, ask yourself this question: Do you want to relax for 30 minutes a day, or be dead 24 hours a day?

Later in this program, I will give you an extremely effective tool to help you engage your relaxation response. You can try that, or you can use my UltraCalm [http://diabesity.ultrawellness.com/ultracalm] audio program, which leads you through a specific set of...
powerful techniques to turn on the relaxation response.

Chronic stress also makes you depressed, which complicates matters further. Depression and diabetes are linked² and may be interactive. In other words, depression may cause diabetes, and diabetes can cause depression in a vicious cycle. As important as this mind-body connection is, it’s still only one part of the puzzle. What most people don’t realize is that what you do to your body affects your brain as well. As your metabolism, insulin resistance, and diabetes improve, you may find that your mood improves dramatically without the help of antidepressants or other drugs. Healing your body is an essential step for healing your brain. My book The UltraMind Solution (http://diabesity.ultrawellness.com/umsbook) explains how the body affects the brain and how diabesity is linked to mood disorders, cognitive disorders, and brain aging.

**Summary: The 7 Keys of UltraWellness—Treating the Causes of Disease**

Looking at diabesity through this new set of lenses—through the 7 keys to UltraWellness—we can create a comprehensive approach to address this burgeoning epidemic affecting hundreds of millions of people around the world and destroying lives and families.

The old model of lowering blood sugar with medications and insulin, or waiting until you have diabetes to initiate treatment, is outdated and harmful. That is why I recommend a comprehensive approach that can be used anywhere along the continuum of diabesity. This approach focuses on optimizing nutrition, balancing hormones, cooling inflammation, fixing the gut, enhancing detoxification, boosting energy metabolism, and calming the mind.

Using this simple method, we can address all the various components that drive obesity, insulin resistance, diabetes, and the resultant complications. Just treating blood sugar or other risk factors with medication is not very effective, and in some cases may be harmful. What we need is a new era of personalized medicine that addresses the causes of diabesity and disease, not just treatment of the symptoms.

Each person may have different systems that are out of balance. One factor or other may predominate in any individual. For one it may be a high-sugar diet, for the fish hater it may be omega-3 fat deficiency, for the sushi lover it may be mercury toxicity. Functional medicine is a way of thinking about and solving each of these problems—a way of creating a personalized approach to the diagnosis and treatment of the real causes of the disease. It allows us to personalize and individualize care so that we don’t treat everybody the same way.

**Functional medicine marks the end of one-size-fits-all medicine.**

The causes of diabesity aren’t the same for every person. For some diabesity may be simply a result of poor diet. For others it may be due to environmental toxins, chronic inflammation, digestive imbalances, chronic stress, or even food sensitivities. This is why we must take a comprehensive approach to understanding, diagnosing, and treating these fundamental clinical imbalances that drive diabetes, insulin resistance, and most chronic diseases.

This is the future of medicine, and in this program I have created a simple approach that allows you to take advantage of this
information now. Follow it, address the root of your problems, and you can achieve dramatic success in treating and reversing your diabesity.
PART III:

The Diabesity Prescription—
A Six-Week Plan to Reverse and Treat Diabesity
Over many years, I’ve seen thousands of patients with diabesity. I have learned that a comprehensive, integrated approach is necessary in order to address all the underlying causes and all their secondary downstream metabolic problems. This kind of approach often results in dramatic and significant improvement in patients’ health and weight, as well as in their laboratory test results.

The Diabesity Prescription is meant to provide the foundation for lifelong change that corrects all the underlying causes of diabesity. This foundation includes four basic steps:

1. **Step #1: The Nutrition Plan**—A whole-foods, nutrigenomic-based way of eating for life

2. **Step #2: Targeted Supplements**— Helps you optimize your metabolic and cellular function

3. **Step #3: Healthy Living**—Lifestyle changes including regular exercise and deep relaxation

4. **Step #4: Living Clean and Green**—Reducing your toxic exposure by living clean and green

The first six weeks of the program is designed to be a jump start by removing the most likely obstacles for rapid healing:

1. All sugars
2. All flour products
3. All processed food (including all trans fats and high-fructose corn syrup)
4. All gluten and dairy—the major inflammatory foods in our diet

After six weeks, I recommend you reintroduce gluten and dairy and see how their reintroduction affects how you feel, your weight, blood sugar, and metabolism. You may find they create problems or make you sick. If so, stay off them long term. I will give you more details about all of this later in the program.

Once the first six weeks are over, you can also add back an occasional sweet treat or flour product. But these should NOT be a staple of your diet, ever. They may drive you right back into a spiral of worsening diabesity and ill health.

If you follow this program, here’s what you may expect:

- Weight loss
- Improved energy
- Better mental clarity
- Better memory
- Improvement in joint pain
- Improvement in blood sugar and hemoglobin A1c
- Lower blood pressure
- Lower triglycerides, higher HDL cholesterol, and lower LDL cholesterol
- Reduced inflammation and C-reactive protein
- Improvement in kidney function (if you have protein in your urine or reduced kidney function)
- Improvement in neuropathy (if you have it)
- And many other good “side effects”
There are three important action items you must complete to ensure that you successfully treat the real underlying causes of your diabesity and get the most out of the program.

**Action Item 1: Determine Which Plan Is Best for You**

The first thing you need to do is determine how severe your diabesity is, and as a result, whether you should go on the Basic or the Advanced Plan. By asking yourself a simple set of questions, you can indentify just how bad your symptoms are, what your risk is of diabetes, and which plan is best for you.

To do this, turn to your *Six-Week Action Plan* and take the self-assessment quiz found there. This quiz will tell you whether you should go on the Basic or Advanced Plan, both of which are further explained below.

**The Basic Plan**

The Basic Plan is for those of you with mild to moderate cases of diabesity. It will provide you with the necessary dietary and lifestyle changes to bring your biology back into balance, which is what will ultimately resolve your symptoms and restore your health and vitality. Instructions for what to eat, what supplements to take, how to exercise and relax, and how to live clean and green (each of which are essential elements of the program) are outlined in Chapters 13–16.

**The Advanced Plan**

Those of you with more severe cases of diabesity, including everyone with diabetes, will need to go on the Advanced Plan. This is identical to the Basic Plan with the exception that an enhanced set of nutritional supplements has been added to help correct the deeper biological imbalances you may suffer from. If you are on the Advanced Plan, you should take these additional supplements for at least a year—the time it takes to reboot your metabolism and heal from diabesity.

You may need them longer depending on the severity of your condition. After one year you should repeat your lab tests with your doctor (see action item 3 below for more details on testing), repeat the self-assessment quiz, and evaluate your progress. If your numbers are in the ideal ranges and your symptoms better, then you can scale back to just the Basic Plan supplement recommendations. You can remain on the supplements in the Basic Plan for life. I will explain what supplements you need to take for both versions of the plan in Chapter 14.

**Action Item 2: Personalize Your Six-Week Plan**

Once you have identified whether you should go on the Basic or the Advanced Plan, the next thing you need to do is identify which of the seven keys systems in your body are out of balance. Knowing this will allow you to personalize the program to your needs by following a few simple additional steps, which are outlined in Chapters 18–26.

Remember, Functional medicine represents the end of one-size-fits-all treatments. Personalization is a critical component for success on the program. It allows you to address the specific imbalances in your body that are at the root of your illness. By rebalancing these systems, you will give yourself the best possible chance for healing.

Turn to your *Six-Week Action Plan* and complete the “7 Keys Quiz.” This powerful quiz will help you identify precisely how to customize your plan for each separate key in which you identify an imbalance. The process is simple: for each key you will have either no imbalance (indicating no further customizations are necessary) or a moderate or severe imbalance, both of which indicate
that you will need to take additional steps to customize your plan.

Category #1: The Diabesity Prescription—No Imbalance in This Key
If your score places you in this category for a particular key, it indicates that the key is already in balance and you do not need to take any additional steps beyond either the Basic or Advanced Plan. Simply follow the Basic Plan or the Advanced Plan as suggested above. For example, if you score 0–6 on the “Inflammation Quiz,” you do not need to work through the additional steps in Chapter 21 to optimize this key.

Category #2: Self-Care Customizations—Moderate Imbalances
If you score in this range for any one of the individual keys, it indicates that you have a moderate imbalance in that key and that you will need to take additional steps beyond following either the Basic or Advanced Plan to bring that key into balance. For example, if you score 7–9 on the “Inflammation Quiz,” you will start either the Basic or Advanced Plan AND you will need to take the additional self-care steps for inflammation, as given in Chapter 21.

Category #3: Medical Care Customizations—Severe Imbalances
If you score in this range for any one of the individual keys, it indicates that you have a severe imbalance in that key and need to very closely follow these instructions:
1) Step 1 – Just as described in Category #2, start the Basic or Advanced Plan, adding on any additional self-care steps that are recommended in Chapter 21.
2) Step 2 – After the first six weeks of the program are over, retake the self-assessment for any of the keys in which you had a severe imbalance. You may no longer show a severe imbalance in some of these after you have completed the first six weeks of the plan; however, if you do, please seek out the assistance of a practitioner of integrative or Functional medicine, and work through the additional tests and medical care steps outlined in the special guide How to Work with Your Doctor to Get What You Need.

For example, if you scored 10 or above on the “Inflammation Quiz,” you would follow either the Basic or Advanced Plan and add the self-care steps for this key found in Chapter 21. After six weeks, you would retake the “Inflammation Quiz,” and if you still qualify for medical care you would then seek out a doctor to help you, following the recommendations in the How to Work with Your Doctor to Get What You Need.

Action Item 3: Get Tested
If you are at risk for diabesity, when you start the program I would strongly encourage you to get a set of basic, baseline tests that may help you understand more precisely how severe your imbalances are and exactly what is going on inside your body. These will also provide a way of tracking your progress and improvement.

In the special guide How to Work with Your Doctor to Get What You Need I have included extensive information on which basic tests I recommend for everyone at risk for diabetes, additional tests you may need if you have severe imbalances in the seven keys, and other treatments you may need to consider to address all the underlying causes of diabesity, such as heavy metal toxicity and low thyroid function.
While many of the problems you suffer from may be healed by going on The Diabesity Prescription, some of you may need additional medical assistance. Others may already be seeing a doctor for treatment of diabesity. In either case, this special guide will give you important information you need so that you can interface with your medical practitioner in the most effective way possible.

You should also get follow-up testing done at three-month, six-month, and one-year intervals. This will allow you and your doctor to accurately monitor your progress.

If you qualify for the Advanced Plan, it is especially important that you reassess your condition after one year. This will help you determine how to proceed and whether you can scale back to the Basic Plan at this time or if you need to continue with the Advanced Plan.

That’s all you need to know to work through The Diabesity Prescription. But before we get started, I want to share a couple of stories from patients of mine who followed the same plan you are about to start on. Their results were nothing short of miraculous.

**Stories of Healing**

A recent patient of mine, Paul, had a heart attack at the age of 50. I diagnosed him with severe diabesity. He had just had an angioplasty and stent and was on multiple medications for cholesterol, blood pressure, blood thinners, and more. His future looked grim. When he came to see me, I put him on an intensive program of lifestyle treatment that included changes in his diet, increased exercise, and nutritional supplementation. After one year, he had lost 50 pounds, all his numbers had returned to normal—including his blood pressure and cholesterol levels—and he went off all his medications.

Let me tell you the story of another patient, Sam, that will show you the power you have to reverse even the most serious problems.

One evening, after a lecture in New York, a man approached me to ask about seeing me as a patient. He was rotund, with a round, ruddy face, a booming voice, and a gentle manner. Everything about him was large—his appetites, his belly, and his heart.

He seemed tentatively curious about my work, and I was surprised when he showed up in my office. Sam was near 60 years old and his love of everything big was waning as he felt the encroachment of death. He described years of feeding his fat, drinking a pint of heavy whipping cream every night before bed to keep his weight up.

At times he would have a change of heart and try to lose weight. He tried to lose weight as he gained it—he made big attempts and tried some extreme diets, but the results were always the same: He gained back more than he lost.

Finally, he realized that the big presence his 300+ pound corpus gave him was not worth the infirmities he suffered. He was doggedly fatigued and short of breath at nearly every step, his nose was congested, and his legs were swollen. His skin was dry and yeast grew all over his body, fermenting on the sweetness of his skin.

He was not aware that he was diabetic, had dangerous cholesterol levels, angina, sleep apnea (a condition notable for snoring and dangerous stoppages of breathing at night), and a thyroid that was sluggish. He noticed that his leg hair was gone and that he had a more feminine appearance on his face and chest. Because of the estrogen that was produced by his fat cells, his female hormones had reached women’s levels.

He did not realize he was rusting inside, or that his liver couldn’t keep up with his body’s
detoxification demands, or that he was not effective at burning fat anymore. Once his large appetites for life created his personality, and he controlled them. Now they controlled him, and he felt powerless to stop them no matter how hard he tried to will the cravings away.

His testing showed severe sleep apnea, blockages in the blood flow to his heart, very small LDL and HDL cholesterol particles, dangerously high triglycerides, and very high insulin and blood sugar levels. His hormones were completely out of balance—his insulin was more than 200 (normal is less than 20) after a sugar drink, his estrogen was high, his thyroid hormone was low, and his growth hormones were very low. He also had food allergies and deficiencies in his detoxification system because of a fatty liver.

Everything Sam had done to his body he had done himself and could undo. I told him that if he did everything I suggested he would lose weight, feel better, and all his symptoms would go away. I prescribed a simple program for him—The Diabesity Prescription.

I had him eat a whole-foods, unrefined diet without any restriction on calories or amount. I taught him the concept of nutrient density—foods with lots of nutrients and fewer calories, such as whole grains, beans, vegetables, fruits, and nuts. I had him start walking and slowly build up to more exercise. I gave him supplements to balance his blood sugar, including antioxidants such as lipoic acid and coenzyme Q10 for his heart. I also gave him herbs to heal his fatty liver, as well as fish oil and extra fiber. He took a small dose of Armour Thyroid to balance his thyroid, and we treated his sleep apnea with a special machine called CPAP that kept his airway open at night.

Enthusiastic, though somewhat skeptical, he left my office determined. Three months later I spoke to him. He lost 30 pounds, had more energy, and was beginning to look forward to exercise. His nasal congestion was gone and his fluid-filled, swollen legs were better. All of his cravings were gone, he never felt hungry, and he found the program easy to follow.

Fourteen months later I saw him again and repeated his blood tests. I was shocked when he weighed in. He had lost 110 pounds without being on a strict deprivation diet or getting a gastric bypass. He simply changed his eating and his lifestyle. His diabetes was cured; his blood sugar had dropped from 130 to 74 (greater than 126 fasting denotes diabetes). His HDL and LDL cholesterol and triglycerides were normal without any medication. He was exercising vigorously three to four times a week and looked and felt 20 years younger.

He had, after a lifetime of uncontrollable appetites, finally found balance and health without suffering, and continued taking pleasure in food.

You can have the same experience as Sam. All you have to do is follow The Diabesity Prescription. In the remainder of this program, you will learn how to successfully start on the program. I will teach you how to change your diet, explain what supplements you need to take and why, provide specific systems for exercise and deep relaxation, and explain how you can live clean and green. I will also teach you how to optimize the seven key systems in your body that are out of balance.

No matter how severe your condition is, this comprehensive diet and lifestyle program will help you rebalance your insulin and heal from diabesity.

The first and most important step is to change your diet. Here is how.
CHAPTER 13

Step #1: The Nutrition Plan:
A Science-Based, Whole-Foods Approach to Eating—
Food as Medicine

The most powerful tool you have to transform your health is your fork! Use it well and you will thrive. Choose poorly and you will suffer.

The varied components of a whole-foods diet not only taste better, make you feel better, and prevent disease, but they are literally medicine. Mounds of scientific evidence point to the power of food as medicine. These “medicinal” foods are simply what our bodies evolved eating—fresh, unadulterated, slow-burning, high-fiber, vitamin- and mineral-rich, omega-3-plentiful, and phytonutrient-dense plant foods.

That is why we can treat and prevent most chronic illnesses (including diabesity) with a whole, organic, real, unprocessed diet of fresh fruits and vegetables, whole grains, beans, nuts and seeds, small omega-3 containing fish like sardines and herring, and lean animal protein. It is a one-stop shopping method for dealing with everything.

In fact, all nutritional science is converging on a few basic concepts, on which everyone agrees. These are same principles on which The Diabesity Prescription is based:

1. Eat whole, real, fresh, organic, unprocessed food
2. Eat a lot of fruit and vegetables full of colorful phytonutrients
3. Eat foods with plenty of fiber
4. Eat foods containing omega-3 fats

If you follow these four principles, then you are doing 90 percent of what you need to do to stay healthy and reverse diabesity. The rest are small refinements and details.

You will automatically be eating this way as long as you follow the eating plan in this program. I will discuss more about what kinds of foods to include in a moment.

But keep in mind that what is omitted is just as important as what’s included.

If you want to realize the full potential of The Diabesity Prescription to transform your health, then the first step is to temporarily stop all factors that have been shown to cause damage your metabolism.

Stopping the Damage:
Foods to Avoid While on The Diabesity Prescription

Give your body a break for six weeks from known harmful substances. If you read this list and think there will be nothing left to eat, then you have been eating in exactly the way that will make you sick and will keep you that way. The good news is that if your diet is all sugar, flour, and processed foods, you will have the biggest gains to achieve in making a change.

There are two different categories of foods to eliminate: foods to avoid forever and foods you need to avoid during the first six weeks of the program. Go into your kitchen, look through your cabinets, and throw away anything that contains what is described below. When you go to the grocery store, make sure to read the labels of any foods you purchase so you don’t reintroduce these substances into your diet.
Foods to Avoid Forever

There are certain foods that should be avoided forever. They are not real food. They are not meant for human consumption, and they lead to weight gain, heart disease, diabetes, and cancer. There are many whole or real food alternatives. If you want something easy or a treat, then search out real food substitutes for these Frankenfoods, created by food scientists, that benefit the food industry but harm your health.

1. High-fructose corn syrup. This is a manufactured by-product of corn and is a marker of poor-quality food, and may have more harmful effects on your health than regular sugar. Some high-fructose corn syrup contains mercury as a by-product of the manufacturing process.

2. Trans Fats. These are vegetable oils converted through a chemical process into margarine or shortening. They are good for keeping cookies on the shelf for long periods of time without going stale, but these fats have been proven to cause heart disease, diabetes, and cancer. New York City has banned trans fats, and you should too.

3. Processed food, food additives, preservatives, and artificial sweeteners: The average person consumes pounds of these compounds every year. Aside from being harmful themselves, they bring with them many other poor-quality ingredients. Stay away from the following:
   - Artificial sweeteners
     » Aspartame (NutraSweet, Equal), saccharin (Sweet’N Low), sucralose (Splenda), acesulfame-K (Sunette, Sweet-n-Safe, Sweet One).
   - Sugar alcohols
   - Poly-ols such as mannitol, sorbitol, lactitol, malitol, etc. These can cause significant gas and bloating.
   - Fat substitutes (Olean and Salatrim/Benefat)
   - Any food in a box, can, or package—in other words, if it has a label don’t eat it. (There are a few exceptions, such as whole beans and sardines.)
   - Artificial colorings
   - Any food additives
     » Potassium bromate, propyl gallate, sodium nitrite, sodium nitrate, monosodium glutamate, etc.

Check out the Center for Science in the Public Interest’s website for further information and updates on toxic processed foods: www.cspinet.org (click on Chemical Cuisine).

Foods to Avoid During the First Six Weeks of the Program

Sugars in Any Form

◊ Sugar-laden foods
   - Candy, cookies, cereals, pastries, pies, etc., including honey, maple syrup, or molasses

◊ All types of flour products
   - Bagels, breads, rolls, wraps, pastas, etc.

◊ Liquid sugar
   - Processed fruit juices, which are often loaded with sugars; try juicing your own carrots, celery, and beets or other fruit and vegetable combinations instead
   - Sodas or any type of canned or bottled drinks with any type of sugar or sweetener
Stevia—a natural plant-based sweetener, yes, but it still tricks your body into craving more sugar and eating more.

**Toxic Fats**
- Processed oils such as corn, safflower, sunflower, peanut, and canola
- Fried foods

**Toxin-Rich Foods**
- Red meats (unless organic or grass-fed) and organ meats
- Large predatory fish and river fish, which contain mercury and other contaminants in unacceptable amounts; these include swordfish, tuna, tilefish, and shark
- Avoid conventionally grown fruits and vegetables with the highest toxin load. Here are the ten worst offenders: peaches, apples, sweet bell peppers, celery, nectarines, strawberries, cherries, lettuce, grapes, and pears. (See www.ewg.org and its affiliate site www.foodnews.org for a list of low- and high-pesticide-containing foods.) Choose only organic versions of these high-pesticide-residue fruits and vegetables.

**Addictions**
- Caffeine (sodas, coffee, tea, waters)
- Alcohol

These are the primary foods you will avoid during the program. However, there is another critically important group of foods you will avoid during the program: the two primary food allergens that contribute to insulin imbalances—gluten and dairy.

**Food Allergies and Sensitivities: Treating and Reversing Diabesity**

The stresses of our modern, toxic, genetically altered, nutrient-depleted diet; the stress of our lives; and the overuse of antibiotics and other gut-damaging stresses have led many modern humans to suffer from delayed or hidden food allergies or sensitivities. This is the result of a leaky gut.

Clearing up these hidden allergies can dramatically impact your metabolism and diabesity, and may resolve a laundry list of additional symptoms including depression, digestive symptoms, allergies, autoimmune disorders, and neurological symptoms.

The only way to know what you are allergic to (aside from medical IgE and IgG allergy testing) is to eliminate certain substances from your diet, and then systematically add them back in. This is called an elimination/reintroduction diet, and it is a critical part of The Diabesity Prescription.

The concept is simple. If you get rid of the foods that commonly cause bad reactions, you may feel better and you may heal. If you add them back and you get sick, you know you have a problem with them.

The most common and most serious undiagnosed immune or toxic reactions are to gluten and dairy (especially the casein rather than the whey component of dairy). These are also the main allergens and foods that cause bad reactions. Stopping these foods can be life-changing for the majority with diabesity.

In fact, in type 1 diabetes, an autoimmune disease, there is a strong correlation between casein in dairy, and gluten in wheat, and development of the disease.

The inflammation and toxic effects of these otherwise harmless and often healthful foods are extremely powerful in the derailing of our metabolism and the creation of inflammation and diabesity. That is why I recommend a short holiday from these two worst offenders,
which are unfortunately the staples in our diet. I recommend that you eliminate the following foods in addition to those listed above for the first six weeks on The Diabesity Prescription:

✧ **Gluten** (wheat, barley, rye, spelt, kamut, triticale, and oats). See www.celiac.com for a complete list of foods containing gluten. Sometimes gluten is hidden in surprising places, such as salad dressing, soup, and beer.

✧ **Dairy** (milk, cheese, yogurt, sour cream, ice cream)

This means a complete 100 percent elimination of all gluten, no exceptions (not even a crumb), and all dairy foods (not even a drop in your tea or coffee) for a full six weeks.

That is enough time to feel better, and notice a change. And it is long enough that when you add them back, you should see immediately how you react.

At the end of the program, I will teach you how to systematically reintegrate gluten and dairy and test for reactions to see if these substances are contributing to your diabesity.

But be warned: gluten and dairy (or other hidden allergens) may not cause symptoms for up to three days after being eaten. That is why carefully reintroduction of these foods and monitoring of how you feel for three days is necessary.

In some cases you may have to eliminate some foods you are sensitive to for a longer period of time, or avoid them altogether if you want to reverse diabesity. I will explain all of this in more detail later, when I talk about food reintroduction.

The beauty of an elimination/reintroduction diet is that it gives you the power of knowledge—the power to know whether these items are contributing to your diabesity. Then you can make choices about what you eat and what you avoid based on your experience with food and how it affects you.

---

The Top Food Allergens

While gluten and dairy are the most important allergens that lead to metabolic problems and diabesity, there are a few other common allergens that may contribute to your health problems as well.

However, since these are not the most important or as common in diabesity, I have not addressed them in this program.

If you do not experience relief by following the first six weeks of The Diabesity Prescription and just eliminating gluten and dairy from your diet, you may be sensitive to other hidden culprits. Blood tests for IgG food allergens (www.immunolabs.com and other labs) may help you identify more uncommon foods that are responsible for symptoms.

For an in-depth discussion of delayed food allergies and a comprehensive elimination diet, see my book or home study DVD course, *The UltraSimple Diet*.

The following list constitutes the staples of the American diet. It is also what we often become allergic to if we have leaky gut lining.
Nutritional Principles of The Diabesity Prescription: What Should I Eat and How Should I Eat?

Now you know what NOT to eat and what foods you are going to avoid for the first six weeks of the program. The next step is to understand what you ARE going to eat and how you are going to eat it.

In the sections that follow I have outlined the basic principles of what to eat for reversing diabesity and maintaining long-term health. These are important eating guidelines you will want to integrate for a lifetime if you are going to achieve UltraWellness. As long as you follow these guidelines, you will begin the first six weeks without a problem.

Keep in mind that these are just the principles, and that I have developed a full six-week eating plan that lists foods you can include on the program, shopping lists, tips on how to cook, and a set of delicious recipes in the Six-Week Action Plan.

Food Quality: Feed Your Body Right

If food is information and your body runs on the right information, then clearly just getting enough calories in a day is not enough. The quality of those calories determines the quality of your health.

Remember that your health is also connected to the health of the planet. You can reduce the “carbon footprint” of your diet and transform your health at the same time. What you put on your fork has a broad impact not only on your health but on agriculture, energy consumption, the environment, politics, and the economy.

Here are the principles of choosing quality food. They are, in order of importance:

✧ **Real**—Choose real, whole, unprocessed, fresh foods in as close to their natural state as possible—fresh vegetables, fruits, whole grains, beans, nuts, seeds, and lean animal protein such as small fish, chicken, and eggs

✧ **Clean**—Choose pasture-raised, grass-fed, and antibiotic-, hormone-, and pesticide-free animal products

The top food allergens are:

- Gluten (barley, rye, oats, spelt, kamut, wheat, triticale)
- Dairy (milk, cheese, butter, yogurt)
- Eggs
- Yeasted products (wine, vinegar, breads)
- Corn
- Peanuts
- Nightshades (tomatoes, eggplants, peppers, potatoes)
- Citrus fruits (oranges, grapefruits, etc.)
- Soy

A few others deserve honorable mention but are not as common. They are chocolate, tree nuts, vinegar, and shellfish.

---

Footnote: Grass-fed means that the animals you eat spend their lives roaming and eating grass in a pasture, as they evolved doing. Grass-fed animals are not closed up in a feedlot or CAFO (confined animal feeding operation), which means they have much less need for antibiotics. In addition, they move and eat a healthier, more natural diet, which means they are leaner. And they eat grass, which leads to higher amounts of omega 3-fats and vitamins and minerals in the meat than grain-fed animals.
Organic—Choose organic fruits and vegetables to reduce the toxic effects of pesticides on your metabolism, and also on your thyroid and your sex hormones, which are very sensitive to the effects of low-level toxins.

Local—Eat local foods that are in season. Frequent your local farmers' markets, and consider joining your local community-supported agriculture projects. Learn more at www.nal.usda.gov/afsic/pubs/csa/csa.shtml.

When Should I Eat?
The Importance of Meal Timing

Controlling insulin and balancing your blood sugar are critical for balancing your mood, focusing, having energy, and preventing all the complications of diabesity such as heart disease, cancer, and Alzheimer's.

It is not very hard. Besides avoiding flour and sugar products, eating smaller, more frequent meals keeps your blood sugar even and prevents swings in energy, mood, and appetite. Your diabesity may improve and you may also experience a reduction in other chronic symptoms like fatigue and depression. Here is what to do:

Eat protein for breakfast every day, such as whole omega-3 eggs, rice or soy protein shakes, and nut butters. It helps you control your appetite and lose weight.

Eat something at least every three to four hours to keep your insulin and glucose levels normal.

Eat a small protein snack, such as a handful of almonds, in the morning and afternoon.

Avoid eating, when possible, two to three hours before you go to bed. If you have a snack earlier in the day you won’t be as hungry and you won’t eat as much later in the day.
has nothing to do with how many calories you eat. It is controlled by a number of different interconnected control systems in the body designed to keep us healthy.

A recent study in the *American Journal of Clinical Nutrition* studied the effects of regular meal frequency on fat burning, insulin sensitivity, and cholesterol in healthy obese women. The researchers studied people who ate small, frequent meals—about six times a day—and compared them to people who ate irregular meals—about three to nine times a day.

It seems obvious that if you eat the same amount of food and only change the number of times a day you eat, it shouldn’t have an effect on your total calorie burning. Calories in, calories out, right?

Well, no! The findings were that those people who ate small, frequent meals showed startling differences. They had increased thermogenesis—a faster, hotter metabolism—from what is called the thermic effect of food (or the TEF factor).

This TEF factor also makes you feel full. It somehow triggers the brain to feel satisfied, and reduces your appetite. When you eat regularly throughout the day, your body likes it more, and you get a slow steady burn effect from the food.

When you eat erratically, such as skipping meals, frequent snacking, or eating late, the body gets mixed signals. During the periods when you aren’t eating, the body slows down metabolism to conserve energy. This may be one of the reasons children and adolescents are facing epidemic proportions of obesity and diabesity, they often eat erratically.

Eating out of the home and the erosion of the traditional family meals by hectic schedules may be a key contributor to our obesity problem. This irregular eating pattern leads to lower energy expenditure (EE) or calorie burning than if we had regular meals.

Other bad things happen when you eat erratically and don’t have a regular rhythm of eating, working, playing, and sleeping. In the same study, the authors found that those who ate in an irregular pattern had higher levels of cholesterol and higher levels of insulin.

This is quite amazing, because it has nothing to do with the content or type of food you eat. Simply changing when and how often you eat can have dramatic effects on your weight and metabolism.

Meal timing is another critical issue. Studies show that eating breakfast and not eating late both lead to reductions in body weight, independent of calories consumed.

Now that you know that eating early, eating often, and not eating late may increase your metabolism and help you lose weight without any changes in what you eat, let’s look at the effect of changing the composition of the meal (not the calorie content). That is, what happens if you change the ratio of fat to protein to and carbs, but don’t change the calories?

Recent studies have clearly shown that low-fat diets don’t work. End of story.

What about low-carb diets like the Atkins diet? Well, they do work but you have to give up the most important source of health-giving compounds in your diet—the fiber, vitamins,
minerals, anti-oxidants, and phytonutrients that come from fresh fruits and vegetables. Low-carb diets also give you constipation, bad breath, hemorrhoids, headaches, and even muscle weakness and pain.

So what about diets with more protein? Before I go on, I should clarify that the protein I am talking about comes from nuts, seeds, beans, whole grains, omega-3 eggs, wild fish, and lean poultry or other meats. I am by NO means suggesting a steak and cheese diet!

Protein, it seems, is more thermogenic. It burns hotter than other food sources so at the end of the day you have burned off more calories when you eat protein. In one study, the participants burned 71 more calories a day than those who ate low-protein diets (36 percent versus 15 percent protein).cxix

That may not seem like much—but over a year it is equivalent to nearly seven-and-a-half pounds of weight loss.

It also seems that amino acids, the building blocks that form protein, send messages to areas in the brain to signal that you are full. This is called the mTOR signaling pathway. You can read more about it in Science.cxv

Eating more good-quality protein can help you not only lose weight, but lose it in the right places. Higher protein diets help people lower their waist circumference, their waist-to-hip ratio (one of the most important measurements in your body, one that predicts diabesity, heart disease, dementia, cancer, and death better than almost anything), and their intra-abdominal adipose tissue (otherwise known as belly fat!).

Those with kidney failure have to be cautious about increasing their protein intake. And those with concerns about osteoporosis should focus on plant sources of protein (nuts, seeds, beans, whole grains), because the high acid content of animal protein may cause bone loss.

How Should I Eat? The Importance of Meal Composition

Composing the perfect meal is essential. To do that, just choose something from each of the whole-food categories below—carbohydrates, fats, and protein.

Get an Oil Change

Omega-3 fats are the most important building blocks for healthy cells. It can take a year to rebuild and remake all your cells and tissues with the right fats, so start right away with the following foods:

✧ Cold-water fish such as wild salmon, sardines, herring, small halibut, and sable (black cod) contain an abundance of these beneficial omega-3 essential fatty acids. A great source of smaller, wild Alaskan salmon, sable, and halibut (all high in omega-3 fats and low in toxins) is from www.vitalchoice.com.

✧ Canned wild salmon, sardines, or herring (kippers) are great emergency foods full of safe omega-3 fats.

✧ Omega-3 eggs, which contain a safe form of DHA. You can enjoy up to eight eggs a week.

✧ Extra virgin olive oil, which contains anti-inflammatory and anti-oxidant phytochemicals. It should be your main oil
except in high-temperature cooking.

✧ Unrefined or expeller-pressed sesame oil is good for high-temperature cooking.

**Protein for Blood Sugar, Insulin Balance, and Hunger Control**

Many studies, including T. Colin Campbell’s *China Study*, cxxi,cxxii point to the risks of too much animal protein. Each person is different and thrives on different types of food. Some do fantastic as vegans while others wither. Some thrive on animal protein; some are sluggish and sick on the same diet. Find the right balance for you by experimenting.

Whatever you do, it is essential that you choose protein at each meal. Remember the TEF factor. Turn up your metabolic fire and ability to burn calories while reducing your appetite. Choose from these high-quality, safe sources of protein.

✧ **Beans or legumes** including whole traditional soy products such as soymilk, soybeans, and tofu are rich in antioxidants that can reduce cancer risk, lower cholesterol, and improve insulin and blood sugar metabolism. Don’t use processed soy products, such as those found in deli-meat replacements or typical meal-replacement bars. They are harmful.

✧ **Nuts** (almonds, walnuts, macadamia nuts, pecans). Nuts have been proven to help with weight loss and reduce the risk of diabetes.

✧ **Seeds** (pumpkin, sunflower, flax, chia, etc.)

✧ **Omega-3 eggs**

✧ **Safe, mercury-free fish**, as above

✧ **Organic, grass-fed, and hormone- and antibiotic-free lamb or beef** (or try buffalo, venison, or ostrich, which are leaner), no more than once or twice a week and no more than four to six ounces per serving. Increased meat consumption is associated with diabesity.cxxiv There are good sources at Whole Foods and other local health food stores.

**The Right Carbs: The Most Important Foods for Reversing Diabesity**

Carbohydrates are the most essential part of your diet for long-term health. But not the donuts, bagels, and sweets we typically think of as carbs. These are highly processed foods, stripped of their nutrients and fiber.

When I say carbohydrates I mean real, whole plant foods containing all the vitamins, minerals, fiber, and phytonutrients that create health. Here is what to eat when it comes to carbs:

✧ Create meals **high in low-glycemic legumes** such as lentils, chickpeas, and soybeans. (Try edamame, the Japanese soybeans in a pod, quickly steamed with a little salt as a snack.) These foods slow the release of sugars into the bloodstream, and help prevent the excess insulin release that leads to insulin resistance and its related health concerns, including diabesity, dementia, depression, poor heart health, obesity, high blood pressure, high LDL cholesterol, and low HDL cholesterol

✧ Eat a cornucopia of **fresh fruits and vegetables** teeming with phytonutrients—carotenoids, flavonoids, and polyphenols—associated with a lower incidence of nearly all health problems, including dementia, obesity and aging.

✧ Use more **slow-burning, low-glycemic vegetables** such as asparagus, broccoli, kale, spinach, cabbage, and Brussels sprouts.
Berries, cherries, peaches, plums, rhubarb, pears, and apples are optimal fruits; melons, grapes, and kiwifruit are suitable but contain more sugar. Organic frozen berries (from Cascadian Farms) can be used if you make protein shakes. (This is a good way to get your protein in the morning.)

A diet high in fiber further helps to stabilize blood sugar by slowing the absorption of carbohydrates, and supports a healthy digestive tract. Try to gradually increase fiber to 30-50 grams a day and use predominantly soluble or viscous fiber (legumes, nuts, seeds, whole grains, vegetables, and fruit), which slows sugar absorption from the gut.

Minimize starchy, high-glycemic cooked vegetables, such as potatoes, corn, and root vegetables such as rutabagas, parsnips, and turnips.

Controlling Your Glycemic Load

The glycemic load of a food or meal is defined as the total effect that food or meal has on your blood sugar. The food or meals you eat can have either a high glycemic load or a low glycemic load.

Controlling the glycemic load of your meals is essential. And it is easy to do. Simply combine adequate protein; fats; and whole-food, fiber-rich carbohydrates from vegetables, legumes, nuts, seeds, and fruit at every meal or snack. It is most important to avoid eating quickly absorbed carbohydrates alone, as they raise your sugar and insulin levels. And any large meal raises your blood sugar, so smaller meals help keep your blood sugar even. When you put food on your plate it should look like this: 50 percent vegetables, 25 percent protein (beans, nuts, seeds, lean animal protein), and 25 percent whole grains (not flour products).

Phytonutrients: Healing, Anti-inflammatory, Antioxidant, and Detoxifying Foods

Healing chemicals in foods may, in the end, be more important than the protein, fat, carbohydrates, vitamins, and minerals they contain. Practically the only thing EVERYONE agrees on in nutrition is that eating five to nine servings of fruits and vegetables a day can reduce your risk from almost every known disease of our “modern” civilization, including diabetes, heart disease, stroke, Alzheimer’s, depression, and cancer.

One of the reasons phytonutrients are so powerful has to do with their anti-inflammatory, antioxidant, and detoxifying properties. To get enough phytonutrients in your diet, try the following:

Focus on anti-inflammatory foods as you eat wild fish and other sources of omega-3 fats. Look for red and purple berries (these are rich in polyphenols), dark green leafy vegetables, orange sweet potatoes, and nuts.

Eat more antioxidant-rich and energy-boosting foods including orange and yellow vegetables, dark green leafy vegetables (like kale, collards, and spinach), anthocyanidins (such as berries, beets, grapes, and pomegranate), purple grapes containing trans-resveratrol, and blueberries, bilberries, cranberries, and cherries. In fact, antioxidants are in all colorful fruits and vegetables.
✧ Include detoxifying foods in your diet, such as cruciferous vegetables (broccoli, kale, collards, broccolini, broccoli rabe, Brussels sprouts, cauliflower, bok choy, Chinese cabbage, Chinese broccoli), green tea, watercress, dandelion greens, cilantro, artichokes, garlic, citrus peels, pomegranate, and even cocoa.

✧ Use hormone-balancing foods such as whole-soy foods and ground flax seeds.

✧ Use herbs, such as turmeric, rosemary, and ginger that are powerful antioxidants, anti-inflammatories, and detoxifiers.

✧ Eat garlic and onions, which are noted for their cholesterol-lowering, blood-pressure-lowering, and antioxidant effects. They are also anti-inflammatory and enhance detoxification.

✧ Drink green tea, which contains abundant amounts of anti-inflammatory, detoxifying, and antioxidant phytonutrients.

✧ And yes…chocolate. Only the darkest, most luxurious kind and only one to two ounces a day. It should be 70 percent cocoa.

Remember, these are the principles of the nutrition that are good for everyone (especially those with diabesity) and that you can follow for the rest of your life. Start with the daily menus outlined in the *Six-Week Action Plan* included in this program, so you can learn how to eat this way. Think of *The Diabesity Prescription* as the jump-start for the rest of your life.

Now that you understand the basic underpinnings of *The Diabesity Prescription* nutrition philosophy, we will discuss the nutritional supplementation you need to create optimal cell function and reverse diabesity.
Nutritional supplements are an essential and effective part of diabesity treatment. I recommend a number of different things depending on the severity of the problem, and I will explain all of that momentarily. But first let me tell you why supplements are so important.

What You Really Need: The Truth about Supplements

Think of nutrients as fertilizer for your biochemistry and metabolism. Think of them as little helpers that improve cellular communications and connections.

In a perfect world, no one would need supplements. But given the stress of our modern life, the poor quality of our food supply, and the high load of toxins in our bodies, we clearly need a basic daily supply of the raw materials so that all our enzymes and biochemistry can run as designed.

Remember, studying one nutrient alone used as a drug to treat one disease will often fail. That is because nutrients work in a team. This is where most clinical studies looking at nutrients are flawed.

A professor friend of mine studies the effects of antioxidants on mitochondrial function. He recently studied the effects of vitamin E on mitochondria. When I asked him what forms of vitamin E he used, he said he just used alpha tocopherol. I was surprised that he didn’t use a combination of the tocopherols (alpha, delta, gamma), the way they are found in nature, including the forms we know are more protective than alpha tocopherol alone. He said that the National Institutes of Medicine would only fund the study if he looked at one isolated compound. That just doesn’t make any scientific sense.

There is a basic workhorse team of nutrients needed for everyone. Additional supplements are needed in diabesity. And others may help people with specific imbalances in the seven keys. You have already identified these imbalances by taking the “7 Keys Quiz.” I will show you how to incorporate these additional supplements later, in Chapters 18–25.

In this chapter I will focus on the basic supplements everyone needs to help prevent and reverse diabesity. Then I will address the additional supplements you need if your self-assessment qualified you for the Advanced Plan. For each, I will explain what you need to take and why.

For more specific details about dosages, combination products, and when you should take your supplements, as well as other important advice about supplements, refer to your Six-Week Action Plan.

But before I get to all that, I want to explain why choosing high-quality supplements is essential for good health.

Not All Supplements Are Created Equal

Over the last fifteen years researching and treating thousands of patients, I have learned much about how to find safe, high-quality, and effective nutritional supplement products. Finding the best products to support health
has always been the most difficult part of my job, as it is for any practitioner of Functional medicine. The lack of adequate government regulations, the dizzying number of products on the market, and the large variation in quality all create a minefield of obstacles for anyone trying to find the right supplement, vitamin, or herb.

Be aware that all brands are not created equally. Quality is up to the manufacturer because of limited regulations regarding manufacturing. Certain companies are more careful about quality, sourcing of raw materials, consistency of dose from batch to batch, the use of active forms of nutrients, and avoiding fillers, additives, colorings, etc.

When choosing supplements, it is important that you choose quality products.

While I do not officially endorse or have any consulting or employee relationship with any supplement companies, I do believe that a few have risen to the top of the supplement industry and may be safely used to help support and enhance your health. When choosing supplements, make sure to consider the following factors:

✧ Manufacturers that use GMP (good manufacturing practices) for drug, or use supplement standards from an outside certifying body

✧ Third-party analysis for independent verification of active ingredients and contaminants

✧ Products that have some basis in basic science, such as clinical trials, or have a long history of use and safety

✧ Use of clean products, free of preservatives, fillers, binders, excipients, flow agents, shellacs, coloring agents, gluten, yeast, lactose, and other allergens.

Each person must be cautious and must evaluate companies and products for him or herself. Be sure to pick quality supplements as you acquire the list of vitamins outlined below. It is optimal to work with a trained dietitian, nutritionist, or nutritionally oriented physician or health care practitioner to select the best products.

Now, let’s discuss the supplements you need for the Basic Plan and the Advanced Plan. Understand that the supplements I am about to outline are compounds that research has shown to be helpful in the treatment of diabesity.

The Basic Plan Supplements

Ninety-two percent of Americans are deficient in one or more essential vitamins and minerals, 80 percent are deficient in vitamin D, and more than 99 percent are deficient in the essential omega-3 fatty acids.

For people with insulin imbalance, the problem can be more complex and additional support is needed.

If you qualified for the Basic Plan, the following vitamins are to be taken daily. Even if you are “cured” of diabesity you will need to keep taking them, because you need special vitamins, minerals, and herbs to help compensate for your genetic tendency toward insulin resistance. Let’s take a few moments to review each of these supplements and why they are so important in the treatment of diabesity.

A High-quality, High-potency, Highly bio-available Broad Spectrum Multivitamin

The right multivitamin will contain all the basic essential vitamins and minerals. Often special formulations are available for diabesity
that include many of the ingredients below.

Note that B complex vitamins are an especially important part of a high-quality multivitamin for those with diabesity, as they help protect against diabetic neuropathy or nerve damage and improve metabolism and mitochondrial function.

It’s also interesting to note that vitamin E may help reduce oxidative stress, which is a significant cause of diabesity.

**Calcium and Magnesium**

Diets low in magnesium are associated with increased insulin levels and magnesium deficiency is common in diabetics. Magnesium helps glucose enter the cells and then helps that glucose get burned. Calcium has also been found to increase insulin sensitivity.

**Vitamin D3**

Vitamin D3 improves metabolism by affecting more than 150 different genes that affect inflammation and metabolism.

**Omega-3 Fatty Acids (EPA and DHA)**

These important fats improve insulin sensitivity, lower cholesterol by lowering triglycerides and raising HDL, and reduce inflammation. Fish oil also improves nerve function and may help prevent the nerve damage common in diabetes.

**Glucomannan (Konjac Root)**

Glucomannan, a very viscous fiber from a Japanese tuber or root, has profound effects on insulin, glucose, and hemoglobin A1c. It reduces the absorption of sugars and fats into your blood stream and helps control appetite, weight loss, blood sugar, and cholesterol. When taken before meals it can be a critical component to overcome diabesity, and can lower your insulin response after a meal by 50 percent while lowering LDL cholesterol by 20 percent and blood sugar by 23 percent.

**Alpha Lipoic Acid**

Alpha lipoic acid is a powerful antioxidant and mitochondrial booster that has been shown to reduce blood sugar and heal a toxic liver. It may also be useful in diabetic nerve damage and neuropathy. It can improve the clearance of glucose from the blood by 50 percent.

**Additional Chromium, Vanadium, and Biotin**

Chromium is very important for proper sugar metabolism and insulin sensitivity, and can help you make more insulin receptors. It can help significantly in lowering blood sugar and improving insulin sensitivity. Vanadium may be helpful in improving insulin sensitivity and glucose metabolism as well as thyroid function and cholesterol metabolism. And biotin has been shown to enhance insulin sensitivity and improve glucose metabolism.

**Herbs Including Cinnamon and Green Tea Catechins (ECGC)**

A number of herbs, including cinnamon and catechins from green tea, are helpful in controlling blood sugar and improving insulin sensitivity. Green tea can even increase fat burning and metabolism. Often the best products provide combinations of herbs in one supplement as a way to help control diabesity. I typically recommend taking these supplements together because of the synergistic effect. Follow the directions on the bottle or your physician’s recommendations for dosage.

**Protein Powder for Shakes**

I also strongly encourage the use of a high-quality, hypoallergenic rice- or soy-protein powder that can be used to make shakes.
Some of these powders are anti-inflammatory and support stage 1 and 2 detoxification. Soy protein from whole soy foods with isoflavones can lower blood sugar and cholesterol. It also serve as an excellent breakfast and snack option, help balance your blood sugar, and help heal your liver.

That covers the Basic Plan. So now let’s look at the additional supplements you need to take if you are on the Advanced Plan.

The Advanced Plan Supplements

If your diabesity self-assessment quiz qualified you for the Advanced Plan, you will follow the exact same program outlined for the Basic Plan, but you will add the supplements that follow.

I recommend these additional supplements for those who qualify for the Advanced Plan to help correct many of the underlying imbalances that cause diabesity. These are so important that I believe everyone with moderate to severe diabesity should take them. This is because adrenal imbalances, liver detoxification problems, and gut flora imbalances, as well as mitochondrial dysfunction and oxidative stress, are so much a part of diabesity that fixing those problems helps accelerate the healing and reverses diabesity.

The Advanced Plan supplements should be taken for at least one year. After one year you should repeat your lab tests with your doctor, repeat the self-assessment quiz, and evaluate your progress. If your numbers are in the ideal ranges and your symptoms better, then you can scale back to the Basic Plan supplement recommendations.

Here are the additional supplements you need to take while you are on the Advanced Plan.

Protein Kinase Modulators: Iso Alpha Acids or Hops Extract

A new class of herbal supplements from the hops plant regulates critical signaling factors that control your genes. These are called protein kinases. The iso alpha acids in hops (RIAA and acacia), also known as selective kinase response modulators (SKRMs), have been clinically shown to improve fasting insulin and lipid parameters. They are necessary for turning on and off signals related to insulin resistance and diabesity. They can be a helpful adjunct in the healing of diabesity.

Herbs to Support Improved Insulin Function and Blood Sugar Balance: Fenugreek, Bitter Melon, and Gymnema leaf

For advanced diabesity, I recommend additional herbal supplements including fenugreek, bitter melon, and gymnema leaf. Fenugreek is used in India and the Middle East. It contains 4 hydroxyisoleucine, which assists insulin function and helps lower triglycerides and raise HDL cholesterol. Bitter melon helps reduce blood sugar in diabetes through the phytonutrients it contains. Gymnema is another Ayurvedic herb that may help to repair or heal the pancreas and that lowers blood sugar levels. These have all been shown to improve insulin function and blood sugar balance.

Adrenal Support: Cordyceps, Rhodiola, Ginseng

Chronically activated stress responses are harmful and lead to diabesity. Certain plant compounds known as adaptogens help modulate and balance the stress response, correcting some of the negative effects of chronic stress. I most often recommend a combination supplement that contains cordyceps, rhodiola root extract, and Asian
ginseng root extract. When taken with meals, ginseng can lower blood sugar and improve insulin function.

Mitochondrial and Antioxidant Support: Alpha Lipoic Acid, Arginine, Resveratrol, Carnitine, and CoQ10

Mitochondrial support is important for correcting and reversing more severe diabesity. Most people with diabesity have poorly functioning mitochondria and need help burning calories and fat. Carnitine helps fat burning in the mitochondria. It can also help diabetic neuropathy. Arginine improves insulin sensitivity. Coenzyme Q10 helps lower fasting insulin and glucose level, and improves blood pressure and antioxidant status. Resveratrol, found in the dark purple grapes, improves insulin function through its effect on sirtuins, the master metabolism control genes. It is also being studied as a compound that may slow aging. Note that people with diabesity need more alpha lipoic acid, which is why I included it in the Basic Plan recommendations. If you are taking a combination packet for mitochondrial support, DON’T take the alpha lipoic aid recommended in the Basic Plan Supplement recommendations.

Digestive Support: Probiotics

These are essential, necessary ingredients for support of intestinal health and are often useful in treating diabesity. Our poor-quality diet, overuse of medication, and stress all alter our normal, healthy intestinal flora or bacteria. Abnormal flora can trigger toxin release into the body and generate local inflammation and weight gain, both of which trigger systemic inflammation. This may lead to problems with insulin and blood sugar as described earlier in the program.

Guidelines for Taking Supplements

When taking all of these supplements, there are a few things to keep in mind.

1. Generally, take all your vitamins with food—optimally with the meal or just before. People who take them after a meal may find they just sit on top of their food and upset their stomach. If you still have an upset stomach when taking your supplements, find a doctor who can help to correct any digestive problems, which are often the source of intolerance.

2. Take fish oil just before meals to prevent any fish taste from coming up. Or keep the supplement in the freezer so the capsule is in your intestine before it dissolves.

These supplements are critical if you want to move toward optimal health and reverse diabesity. To make all of this as easy as possible, I have outlined the specific dosages I recommend, additional considerations for choosing supplements, and when to take your supplements. I have even provided you with an easy-to-follow “Supplement Checklist” in the Six-Week Action Plan. Please refer to that guide for additional details.

Now on to the next step of the prescription—exercise and relaxation.
If exercise could be put in a pill, it would be the biggest blockbuster medication of all time. Unfortunately, today nearly half of Americans live a sedentary lifestyle and 88 percent don’t get enough exercise. When it comes to diabesity, exercise is critical for the improvement of insulin sensitivity. It helps reduce central body fat and improves sugar metabolism. Walking after dinner is a powerful way to reduce your blood sugar. Regular exercise may help reduce your risk of complications with diabetes, reverse the diabetes, and help prevent it.

Ideally you should do a minimum of 30 minutes of walking every day. More vigorous and sustained exercise is often needed to reverse severe diabesity. Sustained aerobic exercise, during which you reach 70-85 percent of your target heart rate (see the formula below for calculating your target heart rate), for up to 60 minutes at a time five to six times a week is often necessary for getting diabetes under full control.

Substituting shorter sessions (30 minutes) of interval training two to three days a week in place of your regular aerobic exercise routine can give you more benefits in less time. These sessions help you exercise smarter, not longer. Interval training can help you improve your metabolism and mitochondrial function, and can increase the efficiency of your calorie burning so you burn more calories and energy even when you are NOT exercising. It also takes less time than many other forms of aerobic training. Less time, more benefit—a good formula.

Strength training is also important because it helps maintain and build muscle, which can help with your overall blood sugar and energy metabolism.

As a basic minimum, I only ask you to commit to 30 minutes of vigorous walking every day while you are on this program. However, more is better, and for some of you increasing your aerobic exercise overtime is particularly important. Start by walking every day. Then, if you want or need a more comprehensive exercise regimen (which I strongly encourage), follow these guidelines.

**Aerobic Conditioning: The Basics**

✧ Do at least 30 minutes of aerobic conditioning exercise at least five days a week.

✧ Aerobic conditioning is anything that gets your heart rate up consistently to between 70 and 85 percent of your maximal heart rate. To calculate your target heart rate, subtract your age from 220, and then multiply the resulting amount by 0.70 to 0.85. For example, if you are 45 years old, subtract 45 from 220 to get 175, and then multiply that by 0.70 and 0.85. In this case, your target heart rate would range from 122 to 148 beats per minute.

✧ Use a heart rate monitor; it can help you maintain your pace. I recommend Polar heart rate monitors—you can find out more at www.polarusa.com.

✧ Of the six days you do aerobic conditioning, use two or three for interval training, if possible (see below). If you are over 30 years old, you should have a complete physical exam before starting an interval-training program.
High-Intensity Interval Training: Your Most Powerful Weapon Against Diabesity

Interval training consists of short bursts of high-intensity exercise followed by a longer period of lighter exercise (what we called wind sprints in high school, or what the Swedes call *fartlek* or “speed play”). While interval training was designed for maximizing professional athletes’ performance, the average person can greatly benefit from it as well.

I recommend it. It is a powerful (and time-saving) way to get and stay in shape, both mentally and physically. It is one of the most powerful scientifically proven tools to boost your metabolism and reverse diabesity.

Benefits of Interval Training

1) Improves overall fitness or the ability to utilize oxygen. The more oxygen we use, the more calories we burn.

2) Increases post-exercise fat burning and calorie expenditure, even at rest or during sleep.

3) You can exercise for less time and achieve greater fitness, weight loss, and health benefits.

4) You can naturally increase growth hormone levels and BDNF (the super fertilizer for your brain) and improve insulin function, which promotes fat burning and muscle and brain building.

How to Do Interval Training

Here is a step-by-step overview of how interval training works. There is a version for people who are just beginning to exercise as well as one for those who are a little more advanced and have been working out regularly already.

If you don’t fit either of these categories (i.e., if you can’t walk for 30 minutes at 3.5 mph), then you should build up your aerobic exercise program before you start incorporating interval training. Start by walking vigorously for 30 minutes every day as mentioned above.

Beginners (people who are able to walk for 30 minutes at 3.5 mph)

♦ Step 1. Warm up: five minutes of walking at 3.5 mph.

♦ Step 2. Speed up and walk at 4.0 mph for 60 seconds.

♦ Step 3. Slow down and stroll at 3.0 mph for 90 seconds.

♦ Step 4. Repeat the previous two steps five more times.

♦ Step 5. Finish with five minutes of walking at a comfortable pace to cool down.

Advanced Interval Program

Cardiovascular exercise sessions should total 30-45 minutes in duration. Alternate between the two heart-rate zones as specified below, ending with a five- to ten-minute cool down. I recommend that you add interval training sessions to your exercise program two to three times a week. Here is what to do.

Before all sessions, warm up with five minutes of jogging or cycling at the lowest possible percentage of your all-out effort. After warming up, you will alternate between 30-60 seconds at your interval heart-rate zone and longer periods at the low end of your target heart-rate zone. The duration of the intervals will depend on how long you have been training. Use the tables below to determine the length of the intervals as well as your heart rate zones.
| Weeks 1-2 | Alternate- 5 minutes at the low end of your Target Heart Rate Zone, 30 seconds in your Interval Heart Rate Zone |
| Weeks 2-4 | Alternate- 4 minutes at the low end of your Target Heart Rate Zone, 60 seconds in your Interval Heart Rate Zone |
| Weeks 4-6 | Alternate- 4 minutes at the low end of your Target Heart Rate Zone, 90 seconds in your Interval Heart Rate Zone |
| Week 6- and on going | Alternate- 3 minutes at the low end of your Target Heart Rate Zone, 2 minutes in your Interval Heart Rate Zone |

**How to Calculate Your Heart Rate Zones**

**Target Heart Rate Zone** is 70—85 percent of your maximum heart rate.

✧ 220 minus your age _____ = Estimated Maximum Heart Rate (HR)

✧ To calculate 70 percent: Max. HR x 0.70 = Low Zone

✧ To calculate 85 percent: Max. HR x 0.85 = High Zone

* *If you are taking medications, such as beta-blockers, this equation will not work for you.

**Interval Heart Rate Zone** is calculated at 85-90 percent of your maximum heart rate. Any heart rate above 85 percent of your maximum is in your interval range.

✧ To calculate 85 percent: Max. HR x 0.85 = High Zone

✧ To calculate 90 percent: Max. HR x 0.90 = upper range of interval training

---

I've come across a powerful interval-training program that many of my readers have used with incredible success. Go to http://diabesity.ultrawellness.com/pace to find out more.

**Building Up Your Muscles: Strength Training**

It’s also good to do something to stop the inevitable loss of muscle that happens with aging. One exercise I have my patients perform in the office is to stand up out of a chair without leaning forward or using their arms. It is incredible how many people (even younger people) have lost so much muscle that their thighs can’t even lift their body weight off the chair without some help. Try it yourself now.

Strength training helps to increase muscle size and strength, and increases the number of mitochondria in your body—they are found in the highest concentration in muscle cells and the brain, and are essential for energy production and optimal brain function. Strength training can also boost your metabolic rate so you burn more calories at rest or sleeping.

Find something you like; maybe vary it, but try something. Using your own body weight by doing an activity such as yoga (now practiced by 17 million Americans), stair climbing, push-ups, or squats can be great. Finding a gym and using weights is another way to build muscle. If you have never lifted weights, be sure to get some help from the fitness trainer in the gym.
on using use proper technique and form to avoid injury.

Ideally, you want to build up to two sets of eight to 10 repetitions of an exercise using a weight that leads to muscle fatigue for each major muscle group. A 20-minute routine two to three times a week can cover all the bases. Who doesn’t have 40 to 60 minutes a week to invest in his or her health?

Stay Flexible

Keeping flexible with stretching or yoga prevents injury and general pain from any other type of activity. With some types of yoga, you can even achieve aerobic exercise, strength training, and stretching all in one workout.

To stay flexible, here is what I suggest:

✧ Try to stretch for at least five minutes both before and after you exercise.
✧ Do 30-60 minutes of whole-body stretching twice a week.

Exercise will help you stay mentally and physically fit by getting you to exert yourself daily. Next let’s look at the role of relaxation.

Stress Management and Relaxation Program: Finding the Pause Button

Stress plays a dramatic role in blood sugar imbalance. Stress triggers insulin resistance, promotes weight gain around the middle, increases inflammation, and may ultimately cause full-blown diabetes. It is essential to engage in relaxation practices on a regular basis; options include yoga, deep breathing, progressive muscle relaxation, guided imagery, hot baths, exercise, meditation, massage, biofeedback, hypnosis, or even making love. Your survival depends on it.

Each of us must find a way to bring meaning, purpose, peace, and serenity into our lives in an active and deliberate way. Stress will find you. Don’t worry. Relaxation is more elusive.

The odd paradox is that you must “actively” relax (and that doesn’t mean sitting on the sofa with a bowl of chips or ice cream, watching TV). The stress response is automatic and designed to protect us from danger. But deep relaxation does not happen automatically. You have to work at it.

There are hundreds of ways to turn on the relaxation response, and no one of them is right or wrong. But to thrive and heal the damage from chronic stress, you must find the antidote. Most of us don’t need any help finding our alarm button. That button gets pushed dozens of times a day. But we do need help finding the pause button.

Finding the Pause Button

Where is your pause button? Do you know how to find it? Most of us don’t. It is not something we ever learn.

Healing, repair, renewal, and regeneration all occur in a state of relaxation. So how do we find the pause button and activate the parasympathetic nervous system, otherwise known as the relaxation response?cxlv

Herbert Benson, of Harvard’s Institute for Mind-Body Medicine, calls it “remembered wellness.” While studying Tibetan monks with decades of meditation experience, he found that their brains were different;cxlvii they could quickly slow down their physiology, breathing, heart rate, and blood pressure, and produce calming brain waves.

This is something ancient and familiar to all cultures—except ours. The relaxation response or deep relaxation is activated with human connection, community, love, sex, prayer, celebration, music, dancing, chanting, meditation,cxlviii and even laughter.
The simplest thing is often the best. Here are a few recommendations.

**Soft Belly Breathing**

James Gordon, MD, of the Center for Mind Body Medicine (www.cmbm.org), has used this simple and ancient technique to transform trauma and build connections in war- and disaster-torn areas such as Kosovo, the Middle East, and New Orleans. It is called “soft belly.” You can do it anywhere, anytime.

During the program, try doing it five times a day. I call it the TAKE FIVE system of breathing. Do it when you wake up, before you go to bed, and when you sit down to each meal. Your life will change.

Here is how to do soft belly breathing:

1. Put your hand on your belly and allow your abdomen to relax.
2. Close your eyes or soften your focus by looking at the floor a few feet in front of you.
3. Inhale through your nose and exhale through your mouth.
4. Breathe deeply into your abdomen and feel it expand as you count five.
5. Pause for a count of one.
6. Exhale slowly to a count of five, allowing your body to relax and release tension.
7. Repeat for five breaths or until you feel relaxed.

**The UltraBath**

My next favorite way to push the pause button is the UltraBath. I like it because it is passive. Just fill a bath with hot water, two cups of Epsom salt, a half-cup of baking soda, and 10 drops of lavender oil. Then get in and soak for 20 minutes. If you want to enhance your experience, light a candle and put on some quiet rhythmic music. It is helpful for both relaxation and detoxification.

You need to do nothing more to push the pause button.

But you CAN do more, if you choose to.

**Many Ways to Push the Pause Button**

Personally, I like variety, and I have found many ways to activate the pause button. My favorites are exercise, massage, yoga, saunas, journaling, and deep breathing.

We each may have a different route to achieving the same thing. The route we take may be spiritual, emotional, intellectual, or physical, but it will lead to the same results. Find the pause button and heal your brain.

The key is to do something every day—even if it is just for five minutes. Profound, deep relaxation for 30 minutes a day will transform your life. You are welcome to use my guided relaxation CD program called UltraCalm to help you turn on your pause button.
Your body and metabolism are exquisitely sensitive to environmental toxins and stresses. That is why I have included living clean and green as an essential part of The Diabesity Prescription.

Here are my suggestions on how to take care of your own health and the planet at the same time. There is an intimate connection between the sustainability of our own health and the health of the planet. Small, everyday choices lead to big changes over time for our communities, our planet, and ourselves.

Living clean and green involves four steps:

1. Drink clean water.
2. Limit your exposure to chemicals and metals.
4. Reduce your exposure to electro-pollution or electromagnetic radiation.

Drink Clean Water

You should drink a minimum of six to eight 8-ounce glasses of clean filtered water every day you are on the program (and every day for the rest of your life, for that matter). One of the reasons drinking this much water every day is important has to do with detoxification.

Toxins are ultimately excreted through your stool and urine. When you don’t drink enough water, you become constipated and have darker urine and urinate less frequently. These are signs that your detoxification system is not operating optimally, and your health and mind may suffer as a consequence.

Unfortunately, much of our water supply is contaminated with harmful microbes, pesticides, plastics, metals, chlorine, fluoride, and other toxins. So drinking water out of the tap is less than ideal.

The best water to drink is water that has been passed through a filtering process. Common and inexpensive filters are available, such as carbon filters like the ones Brita makes. See the Resources for water-filter suggestions.

However, the best filter is a reverse osmosis filter that puts the water through a multi-step process to remove these microbes, pesticides, metals, and other toxins. This can be installed under the sink. It’s a great filtering system (and it’s cheaper over the long run).

Water in plastic bottles contains phthalates or bisphenol A, toxic petrochemicals. So avoid them if you can. Mineral water or still water in glass bottles is acceptable for drinking.

Limit Exposure to Chemicals and Metals

While doing all the things in the following list is neither practical nor realistic, it is unfortunately what is optimal for our health. Incorporate the things you can. Find alternatives to the water you drink, get an air

\[2\text{See Resources for safe and effective “green” products for your home and garden.}\]
filter or get rid of molds and other sources of indoor air pollution, change the garden or household chemicals you use, and avoid artificial lighting.²

✦ Avoid water from plastic bottles, which contain phthalates. Drink water that comes in glass bottles or just filter your tap water as I explained above.

✦ Avoid excess exposure to environmental petrochemicals and toxins (garden chemicals, dry cleaning, car exhaust, secondhand smoke).

✦ Avoid charbroiled foods that contain cancer-causing polycyclic aromatic hydrocarbons.

✦ Avoid microwaved food, which produces more AGEs or advanced glycation end products in the food and creates more oxidative stress and inflammation.³

✦ Use HEPA/ULPA filters and ionizers to reduce dust, molds, volatile organic compounds (off-gassing from synthetic carpets, furniture, and paints), and other sources of indoor air pollution.

✦ Have houseplants that help detoxify the air.

✦ Reduce heavy metal exposure by reducing intake of or exposure to predatory and river fish, contaminated water, lead paint, and thimerosol-containing products. Avoid or safely remove silver or amalgam fillings. (See www.iaomt.org for more information on safe biologic dentistry.)

✦ Clean heating systems and monitor them for release of carbon monoxide—the most common cause of death by poisoning in America.

✦ Reduce or eliminate the use of toxic household and personal care products (aluminum-containing underarm deodorant, antacids, and pots and pans; petrochemical-and toxin-containing creams and cosmetics).

✦ Avoid or minimize exposure to bright and fluorescent-lit areas. Use subdued full-spectrum/natural incandescent bulbs or candlelight as much as possible.

Get Your Fluids Moving

In addition to exercise, which is a powerful natural detoxifier, you can include the following in your Diabesity Prescription. Remember, the only ways toxins have to get out of your body is through urine, stool, and sweat.

✦ Facilitate excretory functions:
  • Have one to two bowel movements a day.
  • Drink six to eight 8-ounce glasses of water a day to have clear urine.
  • Sweat regularly and profusely with exercise and the use of steam baths or saunas. (See the guidelines for saunas under “Enhance Detoxification” in Chapter 23.) You can also use the UltraBath.

✦ Learn and practice deep breathing using the soft belly technique. (See the section on soft belly breathing above.)

Minimize Your EMR (Electromagnetic Radiation) Exposure

We do not live in an ideal world. And it is impossible to eliminate exposure to electromagnetic radiation. Debate still rages. The research on harm from EMR is not as extensive as it should be, but it is enough for me to be concerned about its effects.⁴ Yet the absence of evidence is not evidence of absence.

Just because we have not proven beyond a doubt that EMR is harmful, neither is there
any evidence that it is safe. Until we have clear evidence of safety I recommend erring on the side of caution, rather than waiting for 40 years like we did with cigarettes before it was clear there was harm.

Here are things you can do to minimize your risk of harmful effects from EMR. Do what you can.

✧ Try to minimize your exposure to and usage of wireless communication devices including cell phones, cordless phones, and WiFi devices.

✧ Turn off your cell phone when it is not in use. Do not keep it near your head or use it to play games, movies, etc.

✧ Try to keep your cell phone at least six to seven inches away from your body while it is on, or when you are talking, texting, or downloading.

✧ Use air tube headsets or speaker mode when talking. Wireless and wired headsets may still conduct radiation.

✧ Do not keep your cell phone in your pocket or on your hip all day. The bone marrow in your hip produces 80 percent of the body’s red blood cells and is especially vulnerable to EMR damage. The close proximity to your genitals may also affect fertility.

✧ Children and pregnant women should avoid talking on cell phones.

✧ Replace as many cordless and WiFi items as you can with wired, corded lines (phones, Internet, games, appliances, devices, etc.).

✧ Minimize or space out your computer use. Sit as far back from the screen as possible; flat screens are preferable. Use wired Internet connections, not WiFi—especially for laptops.

✧ Keep a low-EMR sleep, home, and personal zone.

• Move your alarm clock radio to at least three feet from your head or use a battery-powered clock; ones; six feet is the recommended distance for you to be from all electronic devices during sleep.

• Avoid waterbeds, electric blankets, and metal frames, which attract electromagnetic frequencies.

• Futons and wood-framed beds are better than metal-coiled mattresses and box springs.

• When using electric stoves, cook on back burners instead of front, as much as possible.

• Metals attract EMR: keep metal away from and off of the body.

✧ Measure EMR from wireless and wired devices with appropriate

✧ To decrease exposure, consider installing EMR filters and preventive technologies in electrical circuits, devices, and appliances. These may help although human studies are limited.

We have now covered the basics of The Diabesity Prescription. By following the steps above you are doing 80 percent of what you need to do to heal from diabesity and take control of your health once more.

In a moment, I will tell you how to personalize this whole program by rebalancing the key systems in your body that cause diabesity if you score high on the self-assessment quizzes. But first, I want to talk a bit about some of the common medications used to treat diabesity. For some of you, medications may be helpful. An understanding of safe and effective alternatives to medication, and the potential benefits and risks of medication, will help you make informed choices and advocate for yourself in your doctor’s office.
There are several different classes of medications that are currently used in the treatment of diabesity. Each has its own effects. Most patients who follow *The Diabesity Prescription* may need less and less medication, and many may get off medication completely. Nonetheless, it’s useful to know what’s out there.

The only medication that I sometimes find helpful is metformin or Glucophage. It is well tolerated, has been around a long time, and has been well studied. Most of the other medications cause serious complications or actually make things worse by boosting insulin levels, lowering blood sugar, and increasing the risk of death and heart attacks.

Oral hypoglycemic medications fall into this category. Some of the medications now available are too new and have not stood the test of time and use. I always keep in mind something I read in a medical editorial years ago: “Be sure and use a new medication as soon as it comes on the market, before the side effects develop.”

**Medications Used to Treat Diabetes**

Medication can be used alone or in combination. Here are the main classes of medications used to treat diabetes:

- **The biguanides**, especially metformin (Glucophage), are among the best medications used to improve insulin sensitivity. They can help lower blood sugars by improving your cell’s response to insulin.

- **Thiazolidinedione** drugs, including rosiglitazone and pioglitazone (Avandia and Actos), are a new class of diabetes medication that can help improve the uptake of glucose by your cells. This is achieved by making you more insulin sensitive. These medications also reduce inflammation and help improve metabolism by working on the PPAR, a special class of cell receptors that control metabolism. Known side effects include weight gain and liver damage. Avandia has been shown in some studies to increase the risk of heart attacks.

- **Older medications called sulfonylureas** include glipizide, glyburide, and glimepiride. I strongly recommend against these medications, because they only reduce your sugar in the short term and can increase insulin production leading to a worsening of the syndrome over the long term. They have also been linked to an increased risk of heart attacks, which is something you are trying to prevent in the first place. In short, they treat the symptoms rather than the cause.

- **Alpha-glucosidase inhibitors** include acarbose and miglitol, which can help lower the absorption of sugar and carbohydrates in the intestines, reducing the absorption of sugar after meals.

- **Incretins** are the new kids on the block. They work by stimulating the release of insulin from the pancreas by stimulating glucagon-like peptide-1 (GLP-1) receptors (exenatide) or inhibiting the enzyme DPP-4, which normally breaks down GLP-1 (sitagliptin). This helps keep blood sugar down. Over 58 percent of those who take it experience nausea and 22 percent have vomiting. Not a very fun way to lower your blood sugar. Long-term studies are
not available to adequately assess the risks. **Insulin** is the last resort after all other measures have failed, because it often leads to a slippery slope of weight gain, increased cholesterol, and higher blood pressure. Many patients have been able to come off insulin entirely if they are treated early and aggressively.

Sometimes combinations of these medications can be helpful. But as you can see, many come with risks that can easily be avoided if you make the necessary dietary and lifestyle changes to treat the underlying causes of your condition.

Before we move on, there are a few more classes of medication I want to speak about that are often prescribed to people with diabesity.

**Cholesterol-Lowering Medication**

**Niacin** (Niaspan) is a very useful “medication.” What you may not know is that it is actually vitamin B3. When used in high doses (1000-2000 mg), it can be very effective in lowering triglycerides and raising HDL—something statins are not very good at. Niacin can rarely cause liver damage. This is my favorite medication to use if we cannot get HDL or triglycerides normalized using dietary and lifestyle measures alone. It also has the benefit of increasing your cholesterol particle size, and has been shown in studies to reverse cholesterol plaques in arteries.

**Statins** (Lipitor, Crestor, Zocor, etc.) have been shown to help lower LDL cholesterol and reduce heart-attack risk and death but ONLY in high-risk patients. However, statins don’t significantly improve lipid particle size, lower triglycerides, or raise HDL. They also seem to increase insulin and can cause muscle damage and neurologic problems. I often find that the natural statins in red rice yeast actually work well without the side effects. Statins lower inflammation as an unintended, but good, side effect. However, there are better ways to reduce inflammation, including an anti-inflammatory diet, exercise, fish oil, and even a multivitamin. For more information, see my blogs about cholesterol:

✧ [www.ultrawellness.com/blog/lowering-cholesterol-levels](http://www.ultrawellness.com/blog/lowering-cholesterol-levels)

✧ [www.ultrawellness.com/blog/cholesterol-heart-disease](http://www.ultrawellness.com/blog/cholesterol-heart-disease)

**Aspirin.** Many patients with diabesity have inflammation and sticky blood. The recommendation offered by most physicians is to take a baby aspirin (81 mg) every day. This can be helpful for many, but is not without risks. Gastrointestinal bleeding and hemorrhagic stroke can result. Three other natural blood thinners I find useful include fish oil, nattokinase (from fermented soybeans), and lumbrokinase (from the silkworm).

**High Blood Pressure Medication**

Safely lowering blood pressure is important in diabesity. For most people simply following *The Diabesity Prescription* may result in lowering your blood pressure naturally. But if you need to take high blood pressure medication, there are a few things you should know.

In general, ACE inhibitors like Altace, ARB blockers like Diovan, and even diuretics can safely lower blood pressure in patients with diabesity. The ACE inhibitors and ARB medication can help slow the progression of kidney disease. On the other hand, I would recommend staying away from beta-blockers because they make insulin resistance worse. There are natural alternatives to high blood pressure medication that can often be helpful, including hawthorn and fish peptides.
Additional Supplements to Support Different Conditions Associated with Diabesity

The following supplements may be useful in treating conditions associated with diabesity. While I strongly advise you against going off any medication without a doctor’s supervision, you can integrate the following in your regimen to help you overcome the conditions listed below, and may be able to get off your medications.

**Elevated Cholesterol (Alternatives to Statins)**

**Red Rice Yeast**

Red yeast rice powder is derived from *Monascus purpureus* WENT, an organism grown on rice. After centuries of use in traditional Chinese medicine, it was discovered that red yeast rice is useful in helping to maintain a healthful balance of cholesterol and related blood lipids in the body.\(^{civ}\)

**Plant Sterols**

Naturally derived plant sterols can also be useful in maintaining healthy cholesterol levels.\(^{civ}\) Plant sterols are one class of phytonutrients—the healing chemicals naturally found in plant foods. Taking them in high concentrations like those offered in supplements can enhance their potency.

**High Blood Pressure (Alternatives to Blood Pressure Medications)**

**Bonito Peptides**

Special proteins found in bonito (a fish related to but smaller than tuna) have been shown to be beneficial in supporting normal blood pressure.\(^{civ}\) One of the peptides called LKPNM acts like a common class of high blood pressure medications—ACE inhibitors. Bonito peptides are extremely safe to take and can safely added to any heart-support program.

**Hawthorn Leaf Extract**

This herbal remedy has been shown to play an important role in heart muscle function and coronary artery blood flow. It has also been shown to lower blood pressure in diabetics.\(^{civ}\)

**Blood Thinners (Alternatives to Aspirin)**

**Nattokinase**

This enzyme, found in the traditional Japanese food natto, helps maintain healthy blood flow and supports the body’s natural clotting processes.\(^{civ}\) It is also useful in supporting blood vessel health.

**Lumbrokinase**

Lumbrokinase is among the few fibrinolytic supplements available. It is useful in helping the body maintain normal coagulation processes.\(^{civ}\)

I have included specific dosing recommendations for all of these supplements in your Six-Week Action Plan.
Now you have learned the basic maintenance program that may take care of 70-80 percent of problems with diabesity.

When you follow *The Diabesity Prescription*, you may discover improvement not only in your energy, weight, and metabolism, but in many other chronic health problems.

However, some of us need a little extra help. We suffer from deeper imbalances that require a little more fine-tuning. Since you have taken the self-assessment quizzes, you should know what areas you need to focus on.

In the next section, I will guide you in going deeper, and help you repair imbalances in the seven key systems. You will learn what additional supplements are available as well as other treatments you may consider. We are all unique and different. In the next section you will learn how personalize *The Diabesity Prescription*. 
PART IV:

Personalize Your Plan for Optimal Results
My deepest wish for each of you is that you find and work with a Functional medicine practitioner, someone who will help you fine-tune and personalize *The Diabesity Prescription*. However, I know that is not always possible, because there are not enough around. I am working with The Institute for Functional medicine (www.functionalmedicine.org) to create curricula for medical schools, residencies, and certification programs, so they can train more doctors in this practice. In 10 to 20 years, I believe, all physicians will be trained in and practice the principles of Functional medicine, because it is the medicine of the future.

The good news is that for 80 percent of you, a Functional medicine practitioner may not be needed if you follow *The Diabesity Prescription*. Using this program and the information in the special guide *How to Work with Your Doctor to Get What You Need*, you can take care of many of your problems yourself or with a conventional doctor as necessary.

I also believe that, by using the self-assessment quizzes in the *Six-Week Action Plan* to identify which keys are out of balance, you can customize *The Diabesity Prescription* by adding the suggestions I will provide in the sections that follow.

As a reminder, the quizzes you took in the *Six-Week Action Plan* to identify imbalances in the seven keys placed you in one of three treatment categories. These are as follows.

**Category #1: The Diabesity Prescription—No Imbalance in This Key**

If your score places you in this category for a particular key, it indicates that the key is already in balance and you do not need to take any additional steps beyond either the Basic or Advanced Plan. Simply follow the Basic Plan or the Advanced Plan as suggested above.

For example, if you score 0-6 on the “Inflammation Quiz,” you do not need to work through the additional steps in Chapter 21.

**Category #2: Self-Care Customizations—Moderate Imbalances**

If you score in this range for any one of the individual keys, you have a moderate imbalance in that key and you will need to take additional steps beyond following either the Basic or Advanced Plan in order to bring that key into balance.

For example, if you score 7-9 on the “Inflammation Quiz,” you will start either the Basic or Advanced Plan AND you will need to take the additional self-care steps for inflammation that are given in Chapter 21.
Category #3: Medical Care
Customizations—Severe Imbalances

If you score in this range for any one of the individual keys, you have a severe imbalance in that key and need to very closely follow these instructions:

1) Step 1 – Just as described in Category 2, start the Basic or Advanced Plan, adding on any additional self-care steps that are recommended in Chapters 19–25.

2) Step 2 – After the first six weeks of the program are over, retake the self-assessment for any of the keys in which you had a severe imbalance. Many of you may no longer show a severe imbalance after you have completed the first six weeks of the plan; however, if you do, please seek out the assistance of a practitioner of integrative or Functional medicine and work through the additional tests and medical care steps outlined in the special guide How to Work with Your Doctor to Get What.

For example, if you scored 10 or above on the “Inflammation Quiz,” you would follow either the Basic or Advanced Plan and add the self-care steps for this key as outlined in Chapter 21. After six weeks, you would retake the “Inflammation Quiz,” and if you still qualify for medical care you would then seek out a doctor to help you, following the recommendations in the How to Get What You Need from Your Doctor guide.

If you qualify for self-care in more than one key, simply add the recommendations together from each key. Start by addressing one key at a time in the order I note below. Add recommendations for each new key every three days.

1. Fix Your Digestion—it’s amazing how many problems can be resolved by fixing your gut. Start here and you may witness miraculous changes in your health.

2. Cool off Inflammation—this key is intimately related to the gut and is the next natural step to take.

3. Optimize Nutrition
4. Enhance Detoxification
5. Balance Your Hormones
6. Boost Energy Metabolism
7. Calm Your Mind

I have kept to a few suggestions in each key on what I have found to be the most effective and important interventions for optimizing your body’s core systems. There are, of course, many other options available for normalizing function in each key; however, those options are best applied with an experienced practitioner.
Now, here are the steps you need to take to optimize each of the seven keys to diabesity.
By far the most powerful tool I have to help my patients heal—more powerful than any medication—is food (and nutritional therapy).

By using the dietary recommendations in *The Diabesity Prescription*, along with the Basic Plan Supplements, you will take care of most of your needs for addressing diabesity. These include extra chromium, vanadium, magnesium, zinc, biotin, vitamin D, vitamin E, and omega-3 fatty acids.

The nutrition recommendations in Chapter 13—how, when, and what to eat—and the supplements are designed to work together to heal diabesity.

For those who scored deficient in omega-3 fats, vitamin D, or magnesium, more of the foods noted below should be included.

There are a few things you will especially want to focus on integrating into your diet if you are imbalanced in this key. All these things are already included in the program. But a special focus on the following may help you recover from deficiencies in these key areas more quickly.

---

**Omega-3 Fat Deficiency**

If you scored over 4 on the “Fatty Acids Quiz,” make sure to concentrate on including the following foods into your diet. They are loaded with healthy omega-3 fats.

✧ Sardines, herring, wild salmon, mackerel
✧ Flax seeds, walnuts

**Vitamin D Deficiency**

If you scored over 3 on the “Vitamin D Quiz,” you can eat more mackerel and herring to get additional vitamin D. However, the best way to ensure adequate blood levels of vitamin D, besides taking a supplement of vitamin D3, is to get 15 minutes of full-body sun exposure between 10 am and 2 pm daily, without sunscreen. (Although I would recommend covering your face.)

**Magnesium Deficiency**

If you scored over 3 on the “Magnesium Quiz,” focus on eating the following foods. They are filled with magnesium.

✧ Dark green leafy vegetables
✧ Legumes—beans of all varieties
✧ Nuts, especially almonds

**Additional Magnesium Supplementation**

If you scored over 3 on the “Magnesium Quiz,” then add this additional magnesium supplementation to your daily regimen.

✧ Use magnesium citrate 150 mg capsules twice a day if you tend toward constipation (reduce the dose if you get loose bowels).
✧ Use magnesium glycinate 120 mg capsules twice a day if you have normal bowels or tend toward loose stools or diarrhea.
Balance is the key to staying healthy, and nowhere is this truer than in the world of hormones. It is important that you not think of them separately, but rather as interconnected parts of a whole that all affect each other.

Hormones are influenced by imbalances in all the seven keys. Our body is one whole system where everything is linked to everything else. So improving your nutrition, reducing inflammation, fixing your gut, and getting rid of toxins all support normalization of hormone function, which translates into better health and reversal of diabesity.

The self-assessment quizzes may have alerted you to focus on imbalances that lead to problems with your thyroid or your sex hormones. Balancing your hormones is relatively easy. Follow these guidelines.

Support Your Thyroid: Self-Care Plan

The production of thyroid hormones requires iodine and omega-3 fatty acids; converting the inactive T4 to the active T3 requires selenium; and the binding of T3 to the receptor on the nucleus, and switching it on, requires vitamin A, and D, and zinc. All these elements are found in a good whole-foods diet and your basic supplements.

However, there are a few food items you should concentrate on integrating into the program to support your thyroid.

Foods for Thyroid Support

These foods are particularly good for thyroid problems. Try to incorporate them into your diet regularly.

✧ Seaweed or sea vegetables (for iodine)
✧ Fish, especially sardines and salmon, for iodine, omega-3 fats, and vitamin D
✧ Dandelion greens for vitamin A
✧ Smelt, herring, scallops, and Brazil nuts for selenium

Also make sure you eliminate the cause of thyroid problems. The following may be contributing to your problems:

✧ Soy foods and the broccoli family (broccoli, cabbage, kale, Brussels sprouts, collard greens) have all been said to cause thyroid dysfunction, but they also have many other health benefits. Human studies have shown no significant effect when whole traditional soy (tofu, tempeh, miso, edamame) is consumed in normal quantities. I don’t recommend avoiding either of these food families, because the benefits are so great and the potential risk is questionable or negligible. However, I would avoid all highly processed soy foods such as burgers, cheese, and bars—these have harmful health effects. Minimally processed soy foods, like soymilk and soy yogurt, are okay in most cases.

✧ Gluten sensitivity or hidden allergy to wheat, barley, rye, oats, and spelt is the most common dietary cause of thyroid problems (this is already part of The Diabesity Prescription, but I wanted to emphasize that gluten can be a significant factor in thyroid problems).
Avoid fluoride. It has been linked to thyroid problems. Fluoride competes with iodine during the production of thyroid hormones, leading to potential difficulties in thyroid production.

Guidelines for effective thyroid testing and thyroid hormone replacement are provided in the special guide, *How to Work with Your Doctor to Get What You Need*. If you have significant thyroid problems or are already on thyroid medication, I also recommend that you read my report *The UltraThyroid Solution* (http://diabesity.ultrawellness.com/thyroid).

Rebalance Your Sex Hormones: Self-Care Plan

Foods That Help Rebalance Sex Hormones

These two hormone-balancing foods should be included in your diet:

✧ Whole traditional soy foods such as tofu, tempeh, miso, natto, and edamame.

✧ Ground flax seeds, two tbsp a day

Supplements for Female Sex Hormone Balance

In addition to your basic supplement plan, take evening primrose oil, an essential anti-inflammatory omega-6 fat (GLA or gamma linoleic acid) that can help balance sex hormones.

Herbs and Phytonutrients

The following herbs and phytonutrients can be particularly helpful for women coping with PMS or menopause.

For PMS:

✧ *Chasteberry* fruit extract (*Vitex agnus-castus*) may help balance the hormones released by the pituitary gland that control your overall hormone function. A study of more than 5000 women concluded that it was effective.

✧ *DIM* (diindolylmethane) is a metabolite of indole-3-carbinol (I3C). Both are found naturally in cruciferous vegetables like broccoli, kale, and Brussels sprouts, and they help improve the detoxification of your sex hormones. DIM can be taken in supplement form and is very effective in reducing toxic forms of estrogen that promote hormonal imbalance.

Supplements for Men with Sexual Dysfunction

A number of products and herbs can be helpful. Here is what I usually recommend for my patients. Some of the compounds noted are already included in the Basic or the Advanced Plan. If you are on those, you don’t need to add the supplements below.

✧ Arginine is an amino acid that creates nitric oxide. That is how drugs like Viagra work—by increasing nitric oxide. Arginine does that without the headaches and blue visual spots.

✧ *Tribulus* fruit is an Ayurvedic herb that helps boost sexual function.

✧ *Ginseng* is a Chinese herb that also helps boost sexual function.

Remember, you can find information on dosing for all of these supplements in your *Six-Week Action Plan*. 
If your score indicated the need for self-care or medical care on the “Inflammation Quiz,” you need to focus on finding and getting rid of the causes of inflammation. The list of causes is, thankfully, short: an inflammatory, high-sugar, processed-food diet; a sedentary and stressful lifestyle; toxins; infections; and allergens. That’s it.

Since most of our inflammation is caused by diet and lifestyle, the treatment for inflammation comes on your plate and in your shoes. What you eat and how much you exercise are the most important factors governing inflammation.

Finding the causes of inflammation is not always easy. The most common and obvious causes are our diet and being sedentary. But there are many factors, and at times specialized testing is needed to find hidden causes.

The two most common sources inflammation in the 21st century are sugar (and refined carbohydrates) and hidden food allergens (perhaps most importantly gluten).

Common, but often unrecognized, inflammation comes from hidden food allergies—especially gluten. Eliminating gluten and other IgG food allergens is one of the most powerful treatments I use in my practice, and you do this as part of The Diabesity Prescription.

Other often-overlooked sources of inflammation are mold in your surroundings (hidden in walls, in damp basements, or in moldy bathrooms); environmental allergies; a hidden infection such as a virus, parasite, or bacteria that doesn’t cause immediately obvious symptoms; a medication you are taking like the birth control pill; and toxins such as mercury or pesticides.

Stress may also make you inflamed. To learn how to deal with stress see Key #7.

And while just sitting around doing nothing also causes inflammation, regular exercise is one of the best-known anti-inflammatories on the planet.clxiii

Multivitamins are also a great natural inflammation-fighting tool.clxiv

Sometimes, locating and eliminating the sources of inflammation requires detective work, testing, and collaboration with an experienced doctor, but the results for your brain, your weight, and your health will be worth the effort.

Self-Care Plan: Inflammation

Cooling off inflammation requires only a few basic steps—here’s a summary, the details of which I will elaborate on in the sections that follow.

Stay off gluten and dairy for six weeks and consider doing a more comprehensive elimination/reintroduction program after the six weeks are over if you are still inflamed. For a step-by-step plan for following the comprehensive elimination diet, please refer to my book The UltraSimple Diet (http://diabesity.ultrawellness.com/usdbook) or the related DVD program, Kick-start Your Metabolism in 7 Days: The UltraSimple Plan to Quickly and Safely Lose Up to 10 Pounds.
Add herbs such as turmeric, and special anti-inflammatory herbal combinations.

If you qualified for medical care on your quiz, then see the special guide, How to Work with Your Doctor to Get What You Need, for further testing for inflammation, allergies, hidden infections, and toxins.

Eat an Anti-Inflammatory Diet

The Diabesity Prescription is designed to be anti-inflammatory, but be sure to add extra anti-inflammatory herbs in your cooking:

- Add anti-inflammatory herbs to your diet daily, including turmeric (a source of curcumin), ginger, and rosemary.

Special Note: Food Allergies

Many people suffer needlessly with hidden food sensitivities and allergies. The most powerful, immediate, and dramatic results you can achieve in the reduction of systemic inflammation will be through elimination of the most common food allergens in your diet: gluten, dairy, eggs, yeast, corn, peanuts, citrus, and occasionally soy.

In The Diabesity Prescription, I have provided you with a method for eliminating the top two allergens from your diet—gluten and dairy. This is because these are the most common allergens that affect your insulin balance, and their elimination benefits almost everyone.

However, for some people the other food allergens mentioned above may be a problem. If you still experience problems with inflammation after the six-week program is over, you may need to go on a more rigorous elimination and reintroduction program.

The UltraSimple Diet provides all the guidance, tools, and resources you need to do this successfully. If you follow The Diabesity Prescription and the self-care program for six weeks and don’t get the results you expect, I strongly suggest that you do the program outlined in The UltraSimple Diet for two weeks, then reintroduce foods slowly to identify the connection between what you are eating and how you feel.

For most of you, eliminating gluten and dairy (by far the worst culprits) will result in significant anti-inflammatory benefit without the need for The UltraSimple Diet.

Special Note: Sugar and Refined Carbohydrates

By far the biggest cause of inflammation in our culture is belly fat resulting from insulin resistance. Too much sugar promotes high insulin levels, which triggers a domino effect leading to system-wide damage, including inflammation.

By following the recommendations in this program and fixing insulin resistance, you will take care of much of the inflammation that results from your diet, other than hidden food allergies.

Supplements to Reduce Inflammation

The nutritional supplements recommended earlier—a multivitamin, omega-3 fats, and vitamin D—all have powerful anti-inflammatory benefits. Additional anti-inflammatory supplements may also be helpful:

- Turmeric—the yellow spice found in curry is the best anti-inflammatory. Often you can purchase anti-inflammatory herbs in combinations including turmeric, ginger, and rosemary. Recommendations on what to buy and specific dosing suggestions can be found in your Six-Week Action Plan.
A n important part of rebalancing your insulin function is fixing your gut. The link is clear, and the results are often immediate and dramatic. Clear out the bad bugs, eliminate food allergens, support digestion with enzymes, add in healthy bacteria or probiotics, add in prebiotics (fiber fertilizer for the probiotics) and healing nutrients, and learn to find the pause button so your gut can relax too.

This is an easy, clear, and simple process that, if followed, can achieve dramatic results quickly, not only for your insulin resistance caused by toxins from bad bacteria but also for your overall health and well-being.

Once your gut is healthy you can keep toxins and allergens out, cool off inflammation, and digest and absorb all the nutrients you need to run your metabolism at top performance.

**Self-Care Plan: Fix Your Gut**

Often you can heal your gut by taking a few simple steps. Here’s a summary, the details of which I will elaborate on in the sections that follow.

✧ For six weeks, get rid of foods that ferment and produce gas in your gut (beans, grains, and all sugars).

✧ Eat slowly, chew your food, and sit down when you eat.

✧ Take digestive enzymes and hydrochloric acid.

✧ Take the gut-healing nutrients glutamine and quercetin.

✧ If your symptoms are not better and you continue to score high on the “Gut Quiz” after six weeks of the self-care plan, follow the medical-care plan outlined in the special guide *How to Work with Your Doctor to Get What You Need*.

### A Gut-Healing Diet

The whole, real, fresh food eating plan in *The Diabesity Prescription* that includes the elimination of dairy and gluten, sugars, and sugar alcohols may by itself do much to heal your gut.

If you scored in the self-care range on the “Gut Quiz,” or if you always feel bloated after eating, follow *The Diabesity Prescription* AND eliminate all grains and beans from your diet for six weeks. These foods are easily fermented and feed yeast and bacteria. Their absence may “starve” the yeast or bacteria, and that may be enough for you to heal the gut without antibiotics or antifungals that clear out the bad bugs.

**Lifestyle Factors and Your Gut**

In addition to the dietary factors above, the following lifestyle changes can help you heal your gut:

✧ Chew each mouthful of food 25 to 50 times—or at least try! This releases EGF (epithelial growth factor), needed for repair and healing of the digestive lining.

✧ Eat slowly and do not do anything else while eating. Remember, it takes 20 minutes for the brain to get the message that the stomach is full.

✧ Never eat standing up.
Gut-Healing Supplements

In addition to taking the probiotics specified if you are on the Advanced Plan, taking digestive enzymes and hydrochloric acid at the outset of a gut-healing program is very effective. The enzymes help break down food and prevent food allergies and the harmful effects of partially digested food products, which trigger allergy. The overgrowth of bacteria in your gut can ferment these half-digested starches, causing more havoc, including bloating and gas. If you are only on the Basic Plan, then add the probiotics as instructed in the Advanced Plan in addition to the enzymes and hydrochloric acid.

Here is what I suggest.

Enzymes

You should take a good, plant-based, broad-spectrum digestive enzyme. This should contain enzymes that break down proteins (proteases), fats (lipases), and carbohydrates (amylases). There is also an important enzyme found to be particularly helpful in addressing neurological issues that result from partially digested gluten and dairy. It is called DPP IV.

Hydrochloric Acid Support

Many of us think that too much stomach acid is our problem, and for some it may be. But often digestive problems occur because of weak stomach acid, which actually can, in some cases, be the cause of reflux and heartburn. Acid-blocking medications often compound the problem. Adequate stomach acid is needed to break down food and activate digestive enzymes.

Betaine or hydrochloric acid supplements must be used carefully and usually under the supervision of a health care practitioner. But they can often be very helpful while your gut is healing.

A Special Probiotic: Yeast Against Yeast

A basic probiotic supplement is necessary for the Advanced Plan or if you score in the self-care section of the gut self-assessment. But there is a unique and often helpful probiotic that many find counterintuitive—why would we take one strain of yeast to kill other yeasts? But Saccharomyces boulardii has profound benefits in controlling diarrhea, fighting other yeast in the gut, controlling bad bugs such as Clostridia, improving gut immunity, improving digestive enzyme function, reducing inflammation, and improving overall gut function. It is one of the mainstays of my gut-repair program.

Gut Repair: Healing Nutrients and Herbs

Specialized gut support products and nutrients are often necessary for gut healing and repair. These are the final tools for correcting digestive problems; healing a leaky gut; and reducing relapse or recurrence of digestive, immune, and metabolic problems.

The following should be taken for three months, depending on the severity of symptoms and response to treatment.

Gut Food

✧ Glutamine—This is a nonessential amino acid that is the preferred fuel for the lining of the small intestine and may greatly facilitate healing. It can be taken for one to two months. It generally comes in powder form and is often combined with other compounds that facilitate gut repair.

Gut Anti-inflammatories

✧ Quercetin—This potent anti-inflammatory is helpful in restoring balance in the gut.

Remember, you can find information on dosing for all of these supplements in your Six-Week Action Plan.
CHAPTER 23

Key #5: Enhance Detoxification

The sustainability of our environment is directly connected to the sustainability of our health. Identifying if and how we are toxic, and then addressing the problem directly by changing our habits, our choices, and our purchases in the marketplace can have a global effect.

The connection between toxins and their effects on metabolism are well established. The link between our addiction to energy, industrialization, and the millions of pounds of chemicals and heavy metals released every year into our environment and the epidemics of chronic illness we now suffer from should make us all stop and think about how we live.

Small choices can make a big difference. Imagine if one day everyone shifted to organic food, or, as they did in Europe, to non-GMO food (genetically modified organisms). It would change the agriculture industry overnight. That is why I believe it is important for everyone to live clean and green.

In most cases, the techniques for limiting your exposure to environmental toxins outlined earlier in this report will help you detoxify and stay free of toxic substances.

Unfortunately, in some cases people have already been exposed to so much toxic material they need a little extra help. If you scored over 6 on the “Toxins Quiz,” this may apply to you.

In this case, learning how your body’s own detoxification system works and how to optimize its function are the keys to achieving and maintaining optimal health. There is no great mystery about how to do this.

Self-Care Plan: Enhance Detoxification

There are a few simple things you can do to boost your detoxification system. Here’s a summary, the details of which I will elaborate on in the sections that follow.

✧ Eat more cruciferous vegetables, garlic, green tea, turmeric, and whole eggs.
✧ Take glutathione-boosting supplements including NAC, milk thistle, and vitamin C. The NAC and milk thistle are part of the Advanced Plan. If you are on the Basic Plan but score high on the detoxification self-assessment quiz, than add the NAC and milk thistle.
✧ Sweat regularly using saunas.
✧ If your score suggests that you seek medical care, then your practitioner may test you for heavy metals such as mercury and lead, and recommend additional detoxification strategies including supplements, intravenous nutrients, and chelation. See the special guide How to Work with Your Doctor to Get What You Need for how to do this.

Dietary Support for Detoxification

Thankfully, plants have evolved many protective defenses against pests and infection, called phytonutrients. Many of these also help
human biology to function better—especially in the realm of detoxification.

These defenses are better developed in organic foods because they have to work harder to survive. Organic food provides higher concentrations of these protective detoxifying, antioxidant, and anti-inflammatory compounds. These compounds may outweigh the benefits we can get from other nutritional supplements in their overall effects on our health.

And they taste better!

**The Detox Powerhouses**

While I recommend these healing foods as part of the basic eating plan in *The Diabesity Prescription*, it is worth emphasizing how important they are, and ensuring that you include these in your daily diet. There are many others that help in detoxification, including cilantro, celery, parsley, dandelion greens, citrus peels, and rosemary, but these are the ones I want you to be sure to include in your diet as often as possible—even daily.

✧ Choose cruciferous vegetables (cabbage, broccoli, collards, kale, Brussels sprouts, Chinese cabbage, bok choy, arugula, radish, wasabi, watercress, kohlrabi, mustard greens, rutabaga, and turnips). Eat at least one to two cups, cooked, daily.

✧ Consume curcuminoids (turmeric and curry).

✧ Green tea boosts liver detoxification (increases GST or glutathione enzymes); use one to two cups a day.

✧ Eat high-quality, sulfur-containing proteins—eggs, garlic (a few cloves a day), onions.

**Supplements to Enhance Detoxification**

There are many detoxification pathways—or routes for toxins to get out of the body. But these pathways require many helpers. Vitamins, minerals, amino acids, special nutrients, and a whole range of phytonutrients from the foods noted above are needed for our detox system to function day in and day out.

The most important factor for our detoxification system is keeping our glutathione levels up. Glutathione is the main detoxifier in the body (and antioxidant, and immune booster). Our body needs to regenerate it all the time.

The main nutrients helpful in boosting glutathione are B complex vitamins, especially B6, folic acid, and B12; and the minerals zinc and selenium. All these are part of your basic supplement program.

In fact, as far as my personal supplement program goes, besides taking a multivitamin and fish oil, supporting my glutathione level is the most important thing I do every day for my health.

Here are some additional supplements you can take to do that. Remember, if you are on the Advanced Plan, just add the vitamin C. If you are on the Basic Plan, add all three supplements.

✧ N-acetyl-cysteine or NAC—This is a special amino acid that dramatically increases glutathione. It is even used in the emergency room to treat liver failure from Tylenol overdose.

✧ Milk thistle—This herb has long been used in liver disease and helps boost glutathione levels.

✧ Buffered ascorbic acid (vitamin C)—This vitamin is especially useful during periods of increased detoxification is especially useful.
Be warned: Too much vitamin C may cause diarrhea. If this happens for you, simply reduce the dose.

I have included information on dosing for all of these supplements in your Six-Week Action Plan.

**Hyperthermic Therapy or Heat Therapy (Saunas)**

Sauna and heat therapies are an ancient method of cleansing. The Native American sweat lodge was a tool for physical and spiritual purification. The Environmental Protection Agency has shown that sauna therapy increases excretion of heavy metals (lead; mercury; cadmium; and fat-soluble chemicals such as PCBs, PBBs, and HCBs). It seems science has finally caught up with these historical practices for maintaining health.

The liberation of fat-stored toxins through sweating must be done carefully and sometimes under a doctor’s supervision to prevent complications.

Follow these guidelines for safe detoxification.

**Sauna or Steam Baths**

✧ Find a health club or gym near you that has a sauna or steam room.

✧ Drink at least 16 ounces of purified water before entering the sauna.

✧ Drink during the treatment if you can, and drink at least 16 ounces after the therapy to help flush the mobilized toxins through your kidneys and circulation. Drink more if you’re thirsty.

✧ If you are generally healthy, start with 10 minutes and increase by five minutes daily to a maximum of 30-45 minutes. You should take cold dips or rinses in a shower every 10 minutes.

✧ If you are chronically ill or take medication, be sure to get your doctor’s permission. Then start with five minutes and increase gradually as tolerated.

✧ The sauna temperature should be no higher than 140 to 150 degrees for those with environmental illness or a history of increased toxic exposures.

✧ Infrared saunas are lower temperature and may be more effective and more easily tolerated than regular saunas for liberating stored toxins (See Resources for suggestions).

✧ Shower thoroughly with soap after the sauna to remove the liberated toxins from your skin.

✧ For those needing an intensive detoxification program, daily saunas for six weeks can be dramatically helpful; use once-a-week maintenance therapy afterward.

✧ Some people have symptoms from the release of toxins, including skin rashes, headaches, fatigue, nausea, irritable bowel, confusion, or memory problems. If you experience these side effects, take buffered vitamin C or get the help of a Functional medicine or integrative practitioner.
CHAPTER 24

Key #6: Boost Energy Metabolism

Energy is something we lose with age. But it can also be lost because of anything that triggers more free radicals and oxidative stress, or causes damage to our mitochondria.

Fortunately, even as we are learning how mitochondrial injury is a final common pathway in so many chronic illnesses, especially diabesity, we are also learning how to protect and defend ourselves.

Getting a metabolic tune-up is not only possible but necessary for most of us. It is especially so for those whose score indicates either self-care or medical care on the “Loss of Energy Quiz.”

Thankfully, by eating a plant-based diet, reducing toxic exposures, and supplementing with mitochondrial protective and antioxidant compounds, we can protect and restore our energy metabolism to optimal function.

Self-Care Plan: Boost Your Energy

Dietary Changes to Boost and Improve Energy Production

The dietary factors that boost your energy metabolism are already built into The Diabesity Prescription. Just be sure to focus on antioxidant-rich fruits and vegetables such as yellow and orange fruits and vegetables, blueberries, red grapes, spinach, and green tea, as well as the herbs turmeric, ginger, and garlic. The darker and richer the color of the fruit or herb, the more potent the antioxidants and energy boosters.

Supplements to Boost Energy and Reduce Oxidative Stress

The super nutrients that fire up your energy factories or mitochondria include the following.

Super Mitochondrial-Boosting Nutrients

There are a number of special nutrients that are not “essential” but become essential under conditions of stress, toxicity, and aging; they can dramatically improve energy production and mitochondrial function, as well as protect the mitochondria from damage. If you are on the Advanced Plan, you are already taking carnitine, alpha lipoic acid, and coenzyme Q10. Stay on them and add D-ribose and resveratrol. The most important are:

✧ L-carnitine
✧ Alpha lipoic acid
✧ Coenzyme Q10
✧ D-ribose
✧ Resveratrol
✧ L-arginine

Remember, you can find information on dosing for all of these supplements in your Six-Week Action Plan.
Most of us were never trained to calm ourselves. Unless, of course, we do it with a big jelly donut or a glass of chardonnay. A runaway stress response has become a part of our daily lives, but most of us are unaware that we are in a perpetual state of alarm. It is just how we are.

Our bodies and brains react to stress immediately and constantly. Unrelieved stress triggers biological responses that become worn into deep groves in our bodies.

Of course, we know that stress can be from psychological causes like feeling powerless and helpless at work or in our relationships—in other words, toxic thoughts, beliefs, and attitudes. But toxic foods, environmental toxins, digestive problems, and even infections can also trigger the same biological stress response.

That is why each of us must find a way to push our pause button on a daily basis. Most of us don’t even know where it is. But we must learn how to identify the ways in which we are stressed, minimize them, and then actively engage the relaxation response or the pause button. This is key to long-term metabolic health. We have to make it part of our daily lives.

Identifying what is stressing you out and learning to press the pause button are critically important steps, especially when you are out of balance in this key. If you scored over 7 on the “Adrenal Dysfunction Quiz,” the following steps may help you find balance again.

Self-Care Plan: Calm Your Mind

Practicing self-care for calming your mind is relatively easy.

✧ Identify and reduce the causes of social, psychological, and physical stressors
✧ Incorporate one to two additional ways to push the pause button besides soft belly breathing, the UltraBath, or saunas. You can also use my guided relaxation CDs, UltraCalm (http://diabesity.ultrawellness.com/ultracalm).
✧ Try some adaptogenic stress-balancing herbs such as ginseng, rhodiola, or Siberian ginseng if you are not on the Advanced Plan, which already includes these.
✧ See medical care options for additional testing and treatment, if needed, with hormones or medication in the special guide How to Work with Your Doctor to Get What You Need.

Identify and Reduce the Causes of Stress

Looking closely at the habits of our life—both what we do and how we think—is not something most of us do on a regular basis. We often don’t connect the choices we make in our diet; in our relationships; or our work; or our use of brain-altering substances like sugar, caffeine, and alcohol, with how we feel every day.

There is big disconnect for many in understanding that the way we live our lives makes us sick and leads to a host of health problems.
Eating junk food, drinking six cups of coffee a day, having those two cocktails at night to calm down, watching four hours of television a day, doing work we hate, or being stuck in relationships that don’t give us peace or joy—we tend to accept these without too much thought about how they drive our biology.

We cannot eliminate all the causes of stress, but we can take an inventory—a close examination of our life—and consider which things we can let go of that are triggering stress and what things we can add that help us heal and thrive.

Consider which things give you energy and which things deplete your energy. Take a piece of paper, and in one column write down all the things that rob you of energy. Beside it, in another column, write down all the things that give you energy.

Make an agreement with yourself to eliminate at least one thing this week that robs you of energy and add one thing to your life that gives you energy. Do this once a week during the six-week program.

For those things you cannot eliminate, you can transform your way of thinking. You can move from your ordinary thinking to extraordinary thinking about your life, from thinking that creates “dis-ease” to thinking that creates well-being for you.

For now, make a list of your own stressors.

**Social or Psychosocial Stressors**

- Thoughts and beliefs about ourselves
- Jobs
- Relationships
- Financial situation
- Kids
- Psychological disorders (i.e., depression, anxiety, etc.)

- Low self-esteem
- The state of the world (i.e., the international political situation, problems in your neighborhood, etc.)

**Physical Stressors**

- Overweight or obesity
- Chronic illness
- Allergens
- Toxins
- Sugar and high-fructose corn syrup
- Saturated and trans fats
- Processed foods
- Chronic infections
- Alcohol, tobacco, and other drugs

Once you have made a list of your various stressors, try and think of ways that you might eliminate them. In some cases, this is easy. For example, if you are sitting watching four hours of television a day or drinking half a bottle of wine every night, these might be physical stressors for you. Instead of watching TV you can take an hour to move your body or do something else that gives you energy. Instead of drinking half a bottle of wine every night, you can choose to drink less.

In other cases, it may be more difficult. If you are dealing with a chronic psychological or health issue, for example, it will probably take some energy to get it worked out. But always remember that you can take some action to reduce the amount of stress in your life.

**Find the Pause Button: Learning Life Skills for Thriving**

My three favorite tools for pushing my pause button are described in Part III and in other keys. They are:
✧ Soft Belly Breathing (The Diabesity Prescription)
✧ The UltraBath (The Diabesity Prescription)
✧ Hyperthermic or Sauna Therapy (Enhance Detoxification)

For a practical guided experience of pushing the pause button, use my audio program, UltraCalm (http://diabesity.ultrawellness.com/ultracalm).

You need to find your own favorites; try to incorporate a few of them during your six-week program.

**Other Pause-Button Pushers**

**Yoga** is a wonderful way to increase fitness and flexibility, calm your mind, and deeply relax. There are classes in almost every town. My favorite yoga technique is called yogic sleep, or “yoga nidra.” See the Resources for recommendations on CDs, videos, and DVDs for yoga.

**Massage.** Learn massage and use it on your partner or friends. And then exchange. Or get a massage as often as you can.

**Tense and relax.** By slowly tensing and relaxing your whole body (all at once or moving progressively from one muscle group to the next—face, neck and shoulders, arms, legs), and then relaxing your whole body (or each muscle group progressively), you will shift the stress response and enter into deep relaxation.

**Use biofeedback.** There are some wonderful computer-integrated tools and devices that can lead you through various mental and physical exercises that will activate the relaxation response. See the Resources for some options. Just load the device into your computer, put three little sensors on your fingers that measure your heart rate variability, and take a journey into deep relaxation.

**Learn mediation.** Mindfulness meditation is a powerful, well-researched tool developed by Buddhists, but is now practiced and used, thanks to the work of Jon Kabat Zinn, PhD, of the University of Massachusetts, in many hospitals and medical centers. Read his book Wherever You Go, There You Are to learn basic mediation techniques, or attend a local class on meditation.

**Pray, chant, dance, and celebrate.** All these are ancient tools for healing and all help you deeply relax. Just pull down the shades, turn on the music, and dance in your living room.

**Practice tai qi quan, or qi gong.** These are ancient, energy-balancing tools that can help restore your health and calm your nervous system.

**Writing away stress.** Journaling is a well-studied and powerful tool to help improve mood and help you become more intimate with yourself. Studies show how it boosts immunity and improves mood.

Daily journaling for 15 minutes can be helpful. You can also try this well-researched tool that can create immediate benefits: Set aside 20 minutes on four days a week to write in your journal. Write nonstop about the most upsetting or traumatic experience of your life. Don’t worry about spelling or grammar. Write about all your emotions and thoughts, as many details as you can remember, and any insights you have.

**Be in nature.** A walk in the woods or on the beach, a hike up a mountain, and watching a sunset all have soothing effects on us and help us push that pause button.

**Listen to music.** Certain types of music have soothing effects on our nervous system. Listen to Bach, Chopin, Mozart, Pachelbel, and Vivaldi. Or explore traditional types of music such as Benedictine or Tibetan monks chanting, or Sanskrit chants.
Be artful. Painting, drawing, sculpting, or engaging in any of the arts engages our brains and minds, creating a soothing and calming effect.

Use Stress-Reducing Supplements and Herbs

Nutrients help regulate and control all the hormones and neurotransmitters involved in brain function and in the stress and relaxation responses. Stress can also quickly deplete the very nutrients needed for deep relaxation of the nervous system, including magnesium, the B vitamins, and vitamin C.

Herbs to Help You Adapt and Respond to Stress

Certain herbs help you adapt better to stress. If you want to add another dimension to your stress-reduction program, try these herbal remedies alone or in combinations. You can reduce the overactivity and increase the resilience of the system by using adaptogenic (named because they may help you adapt to stress) or balancing herbs, including the following:

✧ Asian ginseng root extract (Panax ginseng)
✧ Rhodiola root extract (Rhodiola rosea)
✧ Siberian ginseng (Eleutherococcus senticosus)

Note: If you are on the Advanced Plan, you should already be taking these. If you are on the Basic Plan but score high on the adrenal self-assessment, then add these supplements.

You will find more specific information on exactly what to take and how much in your Six-Week Action Plan.

The Diabesity Prescription: Treating Causes, Not Symptoms

Diabesity is the major threat to our health in the 21st century. This is a tragic consequence of our toxic food environment, our unmitigated exposure to stress, our sedentary lifestyle, and our exposure to unprecedented levels of environmental toxins. However, these problems are completely preventable and often reversible through intensive lifestyle changes, supplements, exercise, stress management, and clean and green living.

Diabesity is the biggest health epidemic triggered by the obesity epidemic, and all our medical efforts to treat it are focused on medications and insulin. This is simply the wrong approach.

The right approach is The Diabesity Prescription. If you follow these guidelines you will very quickly see a dramatic change in your health, your weight, and your diabesity. Just try it!

Once the first six weeks of the program are over, you can add back gluten and dairy and have an occasional (once a week) treat of whole foods that contain sugar or flour. Otherwise, The Diabesity Prescription stays the same. By the end of the first six weeks you will have learned many healthy habits that will help you keep your diabesity under control for a lifetime. In the next section of the report, I am going to explain the best way to reintegrate dairy and gluten, so you can identify if they are indeed contributing to your health problems or diabesity.
PART V:

What to Do When You’ve Completed the Six-Week Plan
Once you are finished with the first six weeks of *The Diabesity Prescription*, I recommend you add back gluten and dairy. You may also have an occasional sweet treat or flour product but you don’t have to. But you have to observe very carefully how that makes you feel and if they are trigger foods, or create inflammation that promotes diabesity and many other chronic symptoms including fatigue, digestive problems, joint pains, sinus or allergy issues, or brain fog.

The temptation will be to splurge or reward yourself for your hard work, but resist that temptation. Overloading your system with foods that are bad for your health may cause severe reactions.

On the other hand, if you want to see for yourself the power of food to affect how you feel, indulge in all your old bad habits for one day and see just how bad you do feel. That might be the best teacher for you; but take heed—you may not be able to function at all that day.

Take it slowly, and choose carefully what you really want. Think about what was just a bad habit. Your body has wisdom that will awaken during your experience on the program. Listen to the wisdom of your body when creating your life after the six weeks have ended. Go slowly and monitor your responses.

**Step #1: What to Do about the Nutrition Plan**

When the first six weeks of the program are over you can (and should) continue many of the healthy habits you learned on the program. At this point you have two dietary options.

**Dietary Option 1: Stay off Dairy and Gluten Long Term**

You may choose to stay off gluten and dairy for as long as you like. In fact, you can keep them out of your diet for a lifetime if you wish.

If this way of eating and living feels right for your body, then perhaps it is the way you will choose to continue living. If so, you are already well on your way to UltraWellness.

Within the parameters of the program, there is almost infinite flexibility—Asian, Mediterranean, traditional Mexican, and Middle Eastern cooking are all options you can explore if you choose to.

Learning how to eat real food is a discovery process. Because these whole foods have more fiber and nutrients, they are more filling and satisfying. Over time, you will learn to adjust portion sizes to your needs, and you will find foods that truly make your brain and body thrive.

Once you have reset your metabolism and established a pattern of eating and self-care that nourishes you, flexibility will become important. Eating any food with great relish and delight—whether it is a decadent chocolate cake or the richest ice cream—is good for the soul and the senses.

While some people may have trigger foods, like the first drink for an alcoholic, most of us can enjoy treats once in a while. Your body will tell you what feels good and what doesn’t.
Once you have reestablished a relationship with your body, you will be drawn to those foods that make you feel good, and from time to time that may include almost anything. Staying in balance and finding a rhythm is the key to lifelong health and a healthy metabolism.

Moderation in all things is still great advice, and that includes moderation in moderation. Enjoy yourself.

**Dietary Option 2: Reintegrate Dairy and Gluten**

If you choose, you may begin integrating dairy and gluten into your diet once the six weeks are over.

In some circumstances, it can be good to reintegrate dairy and gluten into your diet because this allows you to test them and find out whether or not either of them was contributing to your problems with diabesity, or to other health issues such as headaches, joint pain, sinus problems, irritable bowel, fatigue, and mood problems or neurological disorders.

To reintegrate dairy and gluten into your diet, follow these guidelines.

**Reintroducing Gluten and Dairy When the Six weeks Are Over**

You may not have been aware that gluten or dairy was triggering problems for you. When you eliminated them during the six weeks, you may have unknowingly eliminated the very core of your metabolic disorders. That means you need to be careful as you bring them back into your diet.

Reintroduction of gluten and dairy (and any other foods you are sensitive or allergic to) may trigger many symptoms, including:

- Weight gain
- Fluid retention
- Nasal congestion
- Chest congestion
- Headaches
- Brain fog
- Difficulty remembering things
- Mood problems (depression, anxiety, or anger)
- Sleep problems
- Joint aches
- Muscle aches
- Pain
- Fatigue
- Changes in your skin (acne)
- Changes in digestion or bowel function

When you reintroduce foods you are sensitive to (like gluten and dairy), eat them at least two to three times a day for three days to see if you notice a reaction (unless, of course, you notice a problem right away, in which case, stop immediately). But be sure to leave three days in between the time you introduce each food. For example, if you introduce gluten on Monday, don’t add dairy until Thursday.

Symptoms can occur from a few minutes to 72 hours later. If you have a reaction, note the food and eliminate it for 90 days. This will give your immune system a chance to cool off and your gut a chance to heal. In turn, this makes it more likely that you will be able to tolerate these foods in the long run. However, you may find it best to eat them only occasionally (not more than once every three to four days) to keep the immune system cooled off.

If you still react after eliminating the food from your diet for 90 days, you should stay off that food for the long term, or see a physician,
dietitian, or nutritionist skilled in managing food allergies.

Keep a log of any symptoms that you experience when you reintroduce different food groups. Tracking your symptoms should guide you to which foods trigger allergic reactions in your system.

Using a food log to track your symptoms and monitor your progress is an excellent way to identify what foods you can tolerate and what foods you are allergic to.

There is not enough room here to print a sample; however, I have included one in the Six-Week Action Plan. It is a very detailed food log that you can easily use to fill in the blanks.

Keeping a food log helps you see the connection between your daily food choices, activities, and stress management and how you feel. A journal will record your continuing sense of well-being, energy, and weight loss. A written record is a more practical and accessible way to keep track of what is going on for you than simply trying to remember it.

However, always keep in mind the foods you should permanently avoid, and be wary of falling back into addictive patterns that impact your metabolism—patterns like consuming sugar, flour products, or too much caffeine or alcohol.

While you may want to reintegrate gluten or dairy foods, there are other habits you learned on the program you will definitely want to adhere to from now on.

**Step #2: What to Do about Targeted Supplements**

As I have said throughout this program, using the Basic Supplement Plan for diabesity is critical for long-term health. You will want to stay on the basic supplements for the rest of your life.

If you are on the Advanced Plan, you will need to stay on the Advanced Supplement Plan for at least a year. After one year you should repeat your lab tests with your doctor, repeat the self-assessment quiz, and evaluate your progress. If your numbers are in the ideal ranges and your symptoms are better, then you can scale back to just the Basic Supplement Plan.

**Step #3: What to Do about Healthy Living**

Exercise and relaxation are two other parts of the program you will want to continue for life. Exercise and stress reduction are among the few things that always correlate with long-term health in the scientific research. Don’t stop moving your body, and always take the time to relax. These are critical to finding UltraWellness.

**Step #4: What to Do about Living Clean and Green**

You will also want to keep living clean and green. It is one of the best ways to protect your health, the health of our planet, and our children’s future. Follow the steps in Chapter 16, and integrate as many as you can over time.

**What to Do about the 7 Keys**

After the first six weeks of program is over, retake the self-assessment for any of the keys in which you originally had a severe imbalance. Many of you may find that you no longer have any imbalances, and consequently don’t need to continue any of the suggestions in the self-care plan or medical-care customizations. If that’s the case, you can choose to continue or stop the self-care suggestions.

If you do still qualify for self-care or medical care, you should continue the steps you have
been taking to optimize that key. You may also choose to seek the help of a Functional or integrative medical practitioner to assist you in integrating additional treatments into your plan. See more information on additional tests and treatment plans in the special guide *How to Get What You Need from Your Doctor.*

**What to Do about Testing**

At the beginning of *The Diabesity Prescription* you should be monitored every two to three months repeating your abnormal lab tests. That is why finding and working with a doctor is critical. With time, you will learn how your body works and how to work with it rather than against it, and you will need less and less medical supervision and care.

**What to Do When Things Aren’t Working**

A number of obstacles may show up, including resistance to weight loss and change. When these occur, there are usually four main causes.

1. **Problems with Diet and the Understanding of Proper Diet**

   Often, people think they are eating a low-sugar, low-refined-flour and low-carbohydrate diet when they aren’t. Often things sneak in, such as a little too much sugary fruit or a high-carbohydrate breakfast such as oatmeal. These items may, mistakenly, be thought of as healthy, but they can cause problems for many.

   Carefully monitoring and analyzing your diet is critical. Reading labels is essential. Even better—eat only fresh food without labels.

   If you are struggling, I recommend eliminating all fruit and grain products, as well as all sugars, for two weeks, to see if this creates a shift in your metabolism.

   You may also consider finding a Functional medicine or integrative nutritionist to work with.

2. **Inadequate or Inefficient Exercise**

   If you have never exercised, at the initial states of conditioning small amounts of exercise create large benefits. However, as you progress and get healthier, you need a higher intensity of exercise to achieve the same benefit. For example, someone who is 300 pounds and has not taken a walk in his life can walk just a block and get an extreme workout, whereas a marathon runner would need to run a five-minute mile for 10 miles to get an equivalent workout.

   Therefore, as you get in better shape, you need to increase your exercise intensity and duration, and add interval training to continue your improvements in weight, blood sugar, and insulin. I have already outlined a number of routines for exercise earlier in this report.

3. **Hidden Food Sensitivities and Gluten Intolerance or Celiac Disease**

   Hidden food allergies or sensitivities trigger inflammation, which accelerates diabesity. That is why I recommend eliminating gluten and dairy for a six-week trial, in the case of people who are struggling with weight loss, insulin resistance, and diabetes. It is the foundation of *The Diabesity Prescription*. However, sometimes I recommend a more comprehensive elimination diet, which I have created in *The UltraSimple Diet*, to help jump-start weight loss and metabolism and identify the degree to which food sensitivities or allergies may be playing a role.
4. **Toxic Overload**

For many patients, an accumulation of toxins from substances like petrochemicals and heavy metals cause problems. This could be due to overexposure, genetic predispositions that make it difficult to detoxify these chemicals, or both. If this is the case for you, you may need heavy metal detoxification protocols and saunas (which are an excellent therapy for removing petrochemicals). It is then critical to boost detoxification through various supplements for liver detoxification, including n-acetyl-cysteine and milk thistle. This is part of the Advanced Plan.
One in three children born in America today will become diabetic if current trends continue. This is unacceptable for a condition that is nearly 100 percent preventable. Infectious diseases are no longer the leading cause of death in the developing world—it is chronic disease, particularly diabesity, which drives heart disease, stroke, cancer, and dementia.

Finding better medication to treat the problem once it has occurred is not the answer. We don’t need more research. The 10-year follow up of the Diabetes Lifestyle Prevention Trial published recently in the *Lancet* showed that lifestyle is much more effective than any medication in preventing diabetes. It is also the most powerful treatment if you already have diabetes or prediabetes.

The science is clear. We have enough information to solve this problem now, but no one is calling for action or mobilizing a global campaign to address this problem. We fight AIDS, malaria, and tuberculosis all across the globe. But when confronted with a problem that causes more deaths than all those infectious diseases combined—29 million deaths a year—we are silent.

My hope is that each of you will experience vibrant good health and transform your biology from diabesity to UltraWellness. Then you will understand the power you have to change your genes and transform your health by changing what and how you eat, supporting your biochemistry and metabolism with supplements, moving your body, learning to deeply relax, and living clean and green.

If you have diabesity, you likely developed it because you have a genetic predisposition. However, those genetic tendencies can be modified or reversed by maintaining a healthy lifestyle throughout your lifespan. This involves learning to eat and live in a way that supports your health rather than takes away from it.

You will always have the predisposition toward diabesity, but you have the power to completely avert health problems by learning how to support your body so it can function optimally. Remember, the habits you inherit from your parents may, in the end, be more important than the genes you inherit.

My hope is that by experiencing the possibility of healing on personal level, you will help educate others about the power of food and lifestyle to prevent, reverse, and even cure most of the chronic illnesses that cause endless personal suffering and an unsustainable burden to our global economies and our social fabric. We don’t need any new discoveries. We just have to apply what we already know, and our children and their children’s children may be able to live without diabesity, and be healthy and fully engaged with life.
I would love to have your feedback on this program. Knowing what my readership thinks of my work is useful to me in helping me further optimize my products to your needs. Please take a few moments, go to the link below, and fill out the survey there. It will provide me with critical information I need to tailor my writing to your desires.

http://diabesity.ultrawellness.com/feedback
As promised, here is a list of resources you can use to find high-quality food, live clean and green, get help relaxing, locate a practitioner of Functional medicine in your area, and pursue optimal health.

Further Reading and Resources by Mark Hyman, MD

Mark Hyman, MD’s Websites
✧ www.ultrawellness.com
✧ www.ultrawellnesscenter.com
✧ www.drhyman.com
✧ www.ultrametabolism.com
✧ www.ultrasimplediet.com
✧ www.ultramind.com

The UltraWellness Center
45 Walker Street
Lenox, MA 01240
(413) 637-9991
www.ultrawellnesscenter.com

Lifelong health and vitality is our birthright. Few of us know why we lose it or how to get it back. At The UltraWellness Center, our team of doctors, nutritionists, nurses, and health coaches are committed to helping you reach optimal health by identifying the unique underlying causes of disease and treating them. Diet and lifestyle modifications, in combination with nutritional and specialized testing, nutritional supplementation, and medications, are used to address your individual needs, from creating wellness to treating chronic or complex medical problems.

The UltraMind Solution: Fix Your Broken Brain by Healing Your Body First
http://diabesity.ultrawellness.com/umsbook

Do you have a broken brain? This may seem a strange question, but this invisible epidemic affects nearly 1.1 billion people worldwide. Whether you suffer from mood disorder, neurological problems, difficulty with attention, or just low energy and a little brain fog, the real causes will be found in your body, not in your brain. Learn how to heal your brain by fixing your body first using this simple six-week program.

The UltraMind Solution PBS Special
http://diabesity.ultrawellness.com/umsdvd

Watch as Mark Hyman, MD, unveils the secrets of The UltraMind Solution before a live audience. Learn about the seven key systems that are at the root of all broken brains and what you can do to overcome your mood disorders, neurological problems, and other brain-related maladies so you can live a vibrantly healthy life.

Six Weeks to an UltraMind
http://diabesity.ultrawellness.com/umshc

This dynamic self-coaching program provides you with a combination of audio, video, and printed materials that make incorporating The UltraMind Solution into your life as simple as possible.
UltraCalm: A Six-Step Plan to Reduce Stress and Eliminate Anxiety
http://diabesity.ultrawellness.com/ultracalm

Are you stressed out? Do you suffer from anxiety, obsessive-compulsive disorders, or panic attacks? In this audio program, Mark Hyman, MD, walks you through steps you can take that will help you resolve your problems with stress and anxiety. Includes guided visualizations, breathing exercises, tips on nutrition and detoxification, and more.

UltraMetabolism: The Simple Plan for Automatic Weight Loss
http://diabesity.ultrawellness.com/umbook

Based on the cutting-edge science of nutrigenomics—the science of how food talks to your genes—this book promises to reprogram your body to automatically lose weight by turning on the messages of weight loss and health and turning off the messages of weight gain and disease.

The UltraMetabolism PBS Special
http://diabesity.ultrawellness.com/umdvd

In this special that was recorded for public television, Mark Hyman brings the secrets and steps of his UltraMetabolism program home in a two-hour video that will teach you exactly what you need to do to lose weight and live a vibrantly healthy life.

The UltraMetabolism Cookbook: 200 Delicious Recipes That Will Turn on Your Fat-Burning DNA
http://diabesity.ultrawellness.com/umcook

Put the UltraMetabolism program into overdrive with 200 new recipes that will communicate messages of weight loss to your genes while delighting your palate. Learn simple principles of cooking and meal preparation that you can use to stay healthy for life.

The UltraSimple Diet: Kick-Start Your Metabolism and Safely Lose up to 10 Pounds in Seven Days
http://diabesity.ultrawellness.com/usdbook

Grounded in the most up-to-date 21st-century science, this simple seven-day program provides you with the tools you need to treat the two primary underlying factors of weight gain: detoxification and inflammation. By addressing these problems and optimizing the systems in your body that govern inflammation and detoxification, not only will you lose weight, but many of your chronic health symptoms may disappear in as little as seven days.

The UltraThyroid Solution: A Seven-Step Plan to Reverse Hypothyroidism Permanently
http://diabesity.ultrawellness.com/thyroid

Hypothyroidism is a silent epidemic in today’s world, and conventional medicine treats it poorly at best. Learn the seven steps you need to take to comprehensively address your low-functioning thyroid and heal from this potentially devastating disorder.

UltraPrevention: The Six-Week Plan That Will Make You Healthier for Life
http://diabesity.ultrawellness.com/ultraprevention

UltraPrevention is the new science of staying healthy, an innovative program that shatters the myths of today’s “fix-the-broken-parts” medicine. These myths—drugs cure disease, genes determine your fate, getting older means aging, fat is a four-letter word—are actually believed by many doctors, and they are keeping you sick.
Five Forces of Wellness: The UltraPrevention System for Living an Active, Age-Defying, Disease-Free Life

http://diabesity.ultrawellness.com/5forces

Disease is NOT an inevitable part of aging. We just think it is, because most everyone around us becomes sick when they age. Unfortunately, the majority of people have significant imbalances in their bodies and never correct them. That is why their bodies get worse with time—because the problem compounds without any correction. Learn what the five imbalances are that lead to disease and how you can use them as the five forces to wellness instead.

The Detox Box: Your Step-by-Step Daily Plan for Eliminating Toxins and Regaining Energy

http://diabesity.ultrawellness.com/detoxbox

Designed for total cleansing to remove toxins and allergens, boost immunity, and restore energy, this box gives you everything you need in order to complete a safe, effective, and medically informed detoxification program at home.

Nutrigenomics: How Food “Talks” to Your Genes to Send Messages of Health or Disease

http://diabesity.ultrawellness.com/nutrigenomics

Our bodies were not designed to consume the processed and refined foods many of us eat every day. Many of the common problems so many suffer from are the result of poor diet. Consumption of the right foods can turn on your genes to automatically burn fat, fight disease, and reverse chronic aging. Food is medicine…but only the right food. Find out which foods you can use to leverage your body’s natural ability to heal itself.

Tools for Healthy Living, Yoga, and Relaxation

There are many wonderful resources available to help you activate the relaxation response and reduce stress. Below is a selection of some of the best sources of CDs, lifestyle products (such as biofeedback tools), and saunas.

General

Ultracalm: A Six-Step Plan to Reduce Stress and Eliminate Anxiety
Mark Hyman, MD
http://diabesity.ultrawellness.com/ultracalm

Best of Stress Management Kit
James Gordon, MD
www.cmbm.org/mind_body_medicine_RESEARCH/stress_management_cmbm.php

Mindfulness Medication Practice CDs
Jon Kabat Zinn
www.mindfulnesscds.com/series3.html

Health Journeys
www.healthjourneys.com
Resources for self-healing, including guided imagery tapes.

Natural Journeys
www.naturaljourneys.com
Healthy lifestyle DVDs and videos on Pilates, yoga, tai chi, fitness, meditation, and self-healing.

Kripalu Center for Yoga and Health
www.kripalu.org
Many CDs and DVDs to support health and relaxation.
Home Biofeedback Tools

Journey to Wild Divine
www.wilddivine.com
A biofeedback computer game that brings deep relaxation.

Stress Eraser
stresseraser.com/
A home monitor of heart rate variability that can train you to activate the relaxation response.

EMWave
www.emwave.com
From the developers of HeartMath, a personal stress reliever that uses heart rate variability to balance your nervous system.

Saunas for Detoxification

Sunlight Saunas
www.sunlightsaunas.com
My preferred source of infrared saunas.

HiTech Health
www.hightechhealth.com
Another source of infrared saunas.

Living Clean and Green

Home Products

Green Home
Telephone: 877–282–6400 (toll-free)
www.greenhome.com
An online department store and resource for all your green living needs; a place to find up-to-date, credible information to help you make decisions about how to improve the quality of your life.

Gaiam
Telephone 877–989–6321 (toll free)
www.gaiam.com
Gaiam is a provider of information, goods, and services to customers who value the environment, a sustainable economy, healthy lifestyles, alternative health care, and personal development.

H3Environmental Corporation
Telephone 818–766–1787
www.h3environmental.com
The “H3” in H3Environmental refers to the three homes we inhabit: the home within ourselves, the literal home we live in, and our home on the planet. H3Environmental provides healthy, sophisticated, elegant home products as well as valuable practical healthy-home education and information.

EcoChoices Natural Living Store
Telephone 626-969-3707
www.ecochoices.com
Environmentally friendly products for the home.
Allergy Buyers Club
Telephone 888-236-7231 (toll-free)
www.allergybuyersclub.com
Specializes in allergy relief products and education on the control and prevention of allergies, sinusitis, and asthma. Its best-in-class products are natural, green, and hypoallergenic, perfect for a clean, healthy home that is free of pollutants.

Lifekind
Telephone 800-284-4982 (toll-free)
www.lifekind.com
Lifekind provides information and products to help reduce your daily exposure to hazardous chemicals. It offers certified organic and safer alternatives to products made with unhealthy and toxic ingredients.

Water Filters
Custom Pure
Telephone 206-363-0039
www.custompure.com/doc/water.htm
Custom Pure offers a variety of filtration systems to meet your particular needs. But even more important, its trained professionals can help you select the right equipment, install it properly, and maintain it for optimum performance. From drinking water to shower water to small industrial applications, Custom Pure can help with information and products.

Air Filters
AllerAir
Telephone 888-852-8247 (toll-free)
www.allerair.com
AllerAir is dedicated to offering you the safest, most effective air-cleaning technology available. It has a wide selection in many styles and sizes, having developed more than a hundred models to meet any air-purification need.

Nontoxic Household Cleaning Products
Seventh Generation
www.seventhgeneration.com
Ecover
www.ecover.com
Dr. Bronner’s Magic Soaps
www.drbronner.com/
Life Without Plastic
www.lifewithoutplastic.com
LWP us an Internet-based retailer and distributor offering customers around the world nonplastic alternatives to everyday products such as water bottles, food storage containers, and children’s dishes, bottles, and cups. Also has some important basic facts on plastics.
Clean Cosmetics

Cosmetic Safety Database
www.cosmeticdatabase.com
Website provides the Environmental Working Group’s six-month investigation into the health and safety of more than 10,000 personal care product ingredients.

The Campaign for Safe Cosmetics
www.safecosmetics.org
A coalition whose goal is to protect consumers by requiring the health and beauty industry to phase out the use of chemicals that are known toxins.

Natural Cosmetics
The following companies have raised their standards and are now producing cosmetics that are clean.

Dr. Hauschka Skin Care
www.drhauschka.com

Sophyto Organics
www.sophytoorganics.com

Avalon Cosmetics
www.avalonorganics.com

Evan Healy Skincare
www.evanhealy.com

Sumbody Skincare
www.sumbody.com

Food Resources

Organic Essentials
You’ll find a vast array of organic food as well as home-care, health-care, kitchenware, and pet-care products, as well as other valuable resources at these sites.

The Organic Food Pages
www.theorganicpages.com

Shop by Organic
www.shopbyorganic.com
efoodpantry.com
www.efoodpantry.com

Organic Provisions
www.orgfood.com

Organic Planet
www.organic-planet.com

Sun Organic Farm
www.sunorganicfarm.com

Green for Good
www.greenforgood.com

Produce

Diamond Organics
www.diamondorganics.com
Mail-order, high-quality organic produce and raw foods.
Earthbound Farms
www.earthboundfarm.com
Fresh, packaged organic produce.

Small Planet Foods
www.cfarm.com
Home site of Cascadian Farm and Muir Glen—organic frozen and canned vegetables and fruits.

Maine Coast Sea Vegetables
www.seaveg.com
Variety of sea vegetables, including some organically certified types.

Organic Frozen Foods
Cascadian Farm
www.cfarm.com
Great source of organic frozen fruit and vegetables for those in a hurry.

Stahlbush Island Farms, Inc.
www.stahlbush.com

Organic Vegetable Broth
Pacific Foods
www.pacificfoods.com

Imagine Foods
www.imaginefoods.com

Meat, Poultry, Eggs, and Dairy
Eat Wild
www.eatwild.com
Information and ordering site for grass-fed meat and dairy products.

Organic Valley
www.organicvalley.com
Organic meats, dairy, eggs, and produce from more than 600 member-owned organic farms.

Peaceful Pastures
www.peacefulpastures.com
Grass-fed and grass-finished meat, poultry, and dairy products.

Applegate Farms
www.applegatefarms.com
Packaged poultry, meat, and deli products.

Pete and Gerry’s Organic Eggs
www.peteandgerrys.com
Organic omega-3 eggs.

Stonyfield Farm
www.stonyfield.com
Certified-organic dairy products and soy yogurt.

Horizon Organic
www.horizonorganic.com
Variety of certified-organic dairy products, including cheeses.

Fish
Vital Choice Seafood
www.vitalchoice.com
Selection of fresh, frozen, and canned wild salmon.
EcoFish, Inc.
www.ecofish.com
Environmentally responsible seafood products and information.

Crown Prince Natural
www.crownprince.com
Wild-caught, sustainably harvested, specialty canned seafood.

SeaBear
www.seabear.com
Wild salmon jerky for a convenient snack.

Nuts, Seeds, and Oils

Barlean’s Organic Oils
www.barleans.com
Organic oils and ground flaxseeds.

Omega Nutrition
www.omeganutrition.com
Variety of organic oils, and flax- and hempseed products.

Spectrum Naturals
www.spectrumorganic.com
Extensive line of high-quality oils, vinegars, flax products, and culinary resources.

Maranatha
www.worldpantry.com/cgi-bin/ncommerce/ExecMacro/nspired/maranatha/home.d2w/report

Organic nut and seed butters.

Once Again Nut Butter
www.onceagainnutbutter.com
Organic nut and seed butters.

Beans and Legumes

Eden Foods
www.edenfoods.com
Complete line of organic dried and canned beans.

Westbrae Natural
www.westbrae.com
Full variety of organic beans and vegetarian products (soups, condiments, pastas, etc.).

ShariAnn’s Organic
www.shariannsorganic.com
Organic beans, refried beans, soups, and more.

Grains

Arrowhead Mills
www.arrowheadmills.com
Organic grains, including many gluten-free choices.

Lundberg Family Farms
www.lundberg.com
Organic grains and gluten-free items such as wild rice.

Hodgson Mill, Inc.
www.hodgsonmill.com/
Complete line of whole grains, including many gluten-free grains.
SHILOH FARMS
www.shilohfarms.net
Organic whole grains, sprouted grains, and gluten-free items.

SPICES, SEASONINGS, SAUCES, SOUPS, AND SUCH

SPICE HUNTER
www.spicehunter.com
Complete line of organic spices.

FRONTIER NATURAL PRODUCTS CO-OP
www.frontiernaturalbrands.com
Extensive line of organic spices, seasonings, baking flavors and extracts, dried foods, teas, and culinary gadgets.

RAPUNZEL PURE ORGANICS
www.rapunzel.com
Great selection of seasonings such as Herbamare, made with sea salt and organic herbs.

SEEDS OF CHANGE
www.seedsofchange.com
Organic tomato sauces, salsas, and more.

EDWARD AND SONS TRADING CO.
www.edwardandsons.com
Extensive line of vegetarian organic food products, including miso, sauces, brown rice crackers, etc.

FLAVORORGANICS
www.flavororganics.com
Full product line of certified organic pure flavor extracts.

BEVERAGES

NONDAIRY, GLUTEN-FREE BEVERAGES

WESTBRAE WESTSOY
www.westsoy.biz/products/index.php
Unsweetened soy milk

IMAGINE FOODS (SOY DREAM)
www.tastethedream.com

WHITE WAVE
www.silksoymilk.com
Silk soy beverage

PACIFIC NATURAL FOODS
www.pacificfoods.com
Under the “Our Products” tab at the top, go to “Nut & Grain Beverages” or “Soy Beverages”

WHOLESOY & CO.
www.wholesoyco.com
Unsweetened soy yogurt

ORGANIC HERBAL TEAS

MIGHTY LEAF TEA
www.mightyleaf.com

CHOICE ORGANIC TEAS
www.choiceorganicteas.com

YOGI TEA
www.yogitea.com

THE REPUBLIC OF TEA
www.republicoftea.com
NutriTea
www.numitea.com

Water

Brita Filters
www.brita.com/

Reverse-Osmosis Filters
www.h2odistributors.com/index.asp

Nutritionally Oriented Doctors and Organizations

You can visit our team at The UltraWellness Center in Lenox, Massachusetts. Go to www.ultrawellnesscenter.com or call (413) 637-9991 for more information on how to make a personal appointment with Dr. Hyman and his specialized team of doctors, nurses, and nutritionists. You can also use the resources listed below to find additional recommendations.

The Institute for Functional Medicine
www.functionalmedicine.org

American Academy of Environmental Medicine
www.aarem.com

American College for Advancement in Medicine
www.acam.org

American Board of Holistic Medicine
www.holisticboard.org

Laboratories for Specialized Testing

Quest Diagnostics
www.questdiagnostics.com
A resource for most conventional laboratory testing needs.

LabCorp
www.labcorp.com
A resource for most conventional laboratory testing needs.

LipoScience
www.liposcience.com
Innovative nuclear medicine spectroscopy for the assessment of lipid particle size and improved accuracy in assessing cardiovascular risk factors.

IGenEx
www.igenex.com
Specialized testing for detecting chronic infections such as Lyme disease with PCR technology.

Doctor’s Data
www.doctorsdata.com
Experts in testing for heavy metal toxicity and other nutritional and metabolic disorders.

Metametrix
www.metametrix.com
Leaders in nutritional and metabolic testing.
GENOVA DIAGNOSTICS
www.genovadiagnostics.com
Leaders in nutritional, functional, and metabolic testing as well as genetic testing of SNP—single-nucleotide polymorphisms—to help identify disease predispositions that can be modified with lifestyle interventions.

IMMUNO LABORATORIES
www.TheRightFoodForYou.com
IgG food-sensitivity testing.

MEDICAL DIAGNOSTIC LABORATORIES
www.mdlab.com/html/home.html
Advanced infection testing.

DIAGNOSTECHS
www.diagnostechs.com

PROMETHEUS LABS
www.prometheuslabs.com
Preface

The Textbook of Functional Medicine, Institute of Functional Medicine, 2005

Chapter 1: A Hidden Epidemic


Chapter 2: Why Current Treatments Are Misguided


Chapter 3: A New Science-Based Approach to Reverse This Epidemic


Chapter 4: The Myths About What Causes This Epidemic


Chapter 5: Key #1: Optimize Nutrition


Chapter 7: Key #3: Cool off Inflammation


http://www.ewg.org/reports/bodyburden2/newsrelease.php


Chapter 10: Key #6: Boost Your Energy Metabolism

Hampton T. Mitochondrial defects may play role in the metabolic syndrome. JAMA. 2004 Dec 15;292(23):2823-4.


http://www.ultrawellness.com/blog/resveratrol

Chapter 11: Key #7: Calm Your Mind


Makimura H, Mizuno TM, Bergen H, Mobbs CV. Adiponecint is stimulated by adrenalectomy in ob/ob mice and is highly correlated with resistin mRNA. Am J Physiol Endocrinol Metab. 2002 Dec;283(6):E1266-71.


Keim NL, Van Loan MD, Horn WF, Barbieri TF, Mayclin PL. Weight loss is greater with consumption of large morning meals and fat-free mass is preserved with large evening meals in women on a controlled weight reduction regimen. J Nutr. 1997 Jan;127(1):75-82.


Chapter 14: Step #2: Targeted Supplements—Optimizing Metabolic and Cellular Function


Chapter 15: Step #3: Healthy Living—Simple tips for Fun Exercise and Deep Relaxation


Chapter 16: Step #4: Living Clean and Green—Reducing Exposure to Environmental Toxins


Chapter 17: Intelligent Use of Medications: Options and Risks


Chapter 20: Key #2: Balance Your Hormones


Chapter 21: Key #3: Cool off Inflammation


Chapter 23: Key #5: Enhance Detoxification


Chapter 25: Key #7: Calm Your Mind