

A Doctor's Treasury of
Forbidden Secrets
From Nature's
Pharmacy

To Reverse Diabetes and
Blood Sugar Problems

**How you can enjoy healthier
blood sugar FREE of needles,
insulin, meters and
medications**



By Michael Cutler, M.D.
Pioneer in Nutritional Medicine
and Leading Expert in Effective
Natural Health Alternatives

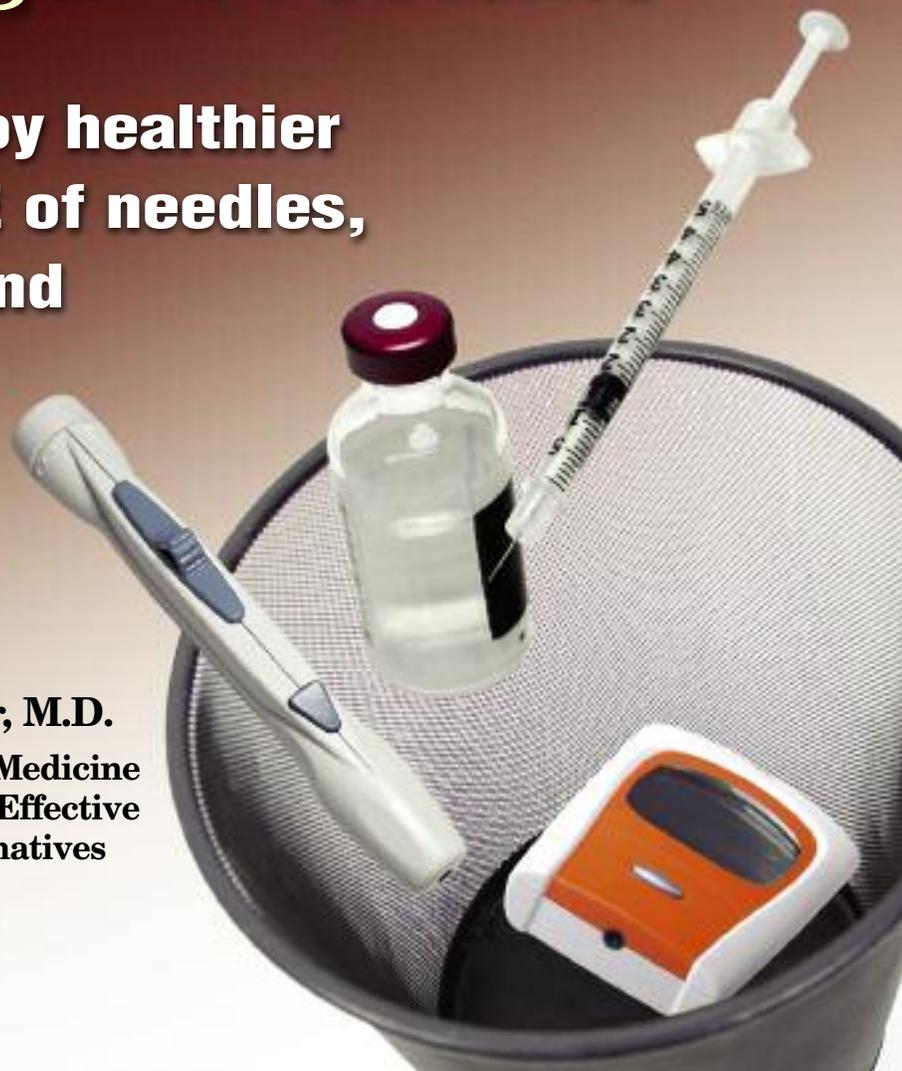


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Introduction

Diabetes mellitus Type 2 and associated blood sugar abnormalities are the most prevalent modern diseases that relate directly to what you eat. Along with cardiovascular disease and cancer, Type 2 Diabetes is a disease almost directly caused by the “affluence” of our nation. Affluence translates into a society in which you can get food quickly and easily, usually resulting in the consumption of highly processed and refined foods—those low in micronutrients and high in calories. According to the U.S. Department of Agriculture (USDA) for example, in the last two decades we’ve eaten approximately 65 percent of our foods from the combined categories of refined white flour and refined white sugar sources—foods almost completely devoid of vital micronutrients. Therefore, diabetes, glucose intolerance, and metabolic syndrome top the list of “sugar-consumption” illnesses.

What few physicians and patients are aware of is that not only can these illnesses be prevented, but they can be reversed—without drugs. Instead of using prescription medications, lifestyle interventions with or without additional nutritional supplementation has proven to eliminate diabetes, glucose intolerance, and metabolic syndrome in most individuals. In this report you will learn what these illnesses are, the conventional medical treatment approaches, and the natural and safer treatment options.

To your health,

A handwritten signature in black ink that reads "Michael Cutler M.D." in a cursive script.

Michael Cutler, M.D.

PART I

What is Diabetes?

According to the American Diabetes Association, more than 23 million Americans have diabetes, including as many as six million individuals who have diabetes and don't know it. But among those aged 60 and older, nearly one in four individuals had diabetes in 2007. To put it into greater perspective, diabetes kills more people than AIDS and breast cancer combined! It is estimated to be the sixth (some report the seventh) leading cause of death, claiming more than 284,000 American lives in 2007.

What Exactly is Diabetes?

Diabetes is a condition of dysfunctional blood sugar metabolism. The body is unable to create or effectively use its own insulin, a hormone that is produced by islet cells of the pancreas. I'll explain insulin further. But first know that every cell of your body needs sugar to function and stay alive. Muscle cells, for example, use basic glucose sugar molecules to generate the energy behind muscle contraction. For glucose molecules to be able to enter your cells where they can be utilized as a fuel source, they require the hormone called insulin to do so.

But when sugar cannot get into cells readily, it stays in the blood stream in high amounts. This sugar can then readily attach to the cells of sensitive organs (such as your eyes), heart muscle, nerves, and even kidney tissues. This **“glycation” effect** impairs the functioning of cell metabolism so that over time excess sugar damages your heart, blood vessels, nerves, kidneys, and skin.

What happens when this process goes awry? In the case of Type 1 Diabetes (juvenile or insulin-dependent diabetes), the pancreas does not make sufficient quantities of insulin. So insulin must be supplied to the body on a regular basis.

With the much more common Type 2 Diabetes, insulin levels in the blood are higher than normal and not effectively moving sugar through cell membranes and into your cells. This is a condition called “insulin resistance.” Left unchecked, insulin resistance leads to increased levels of insulin and further non-responsiveness by your cells.

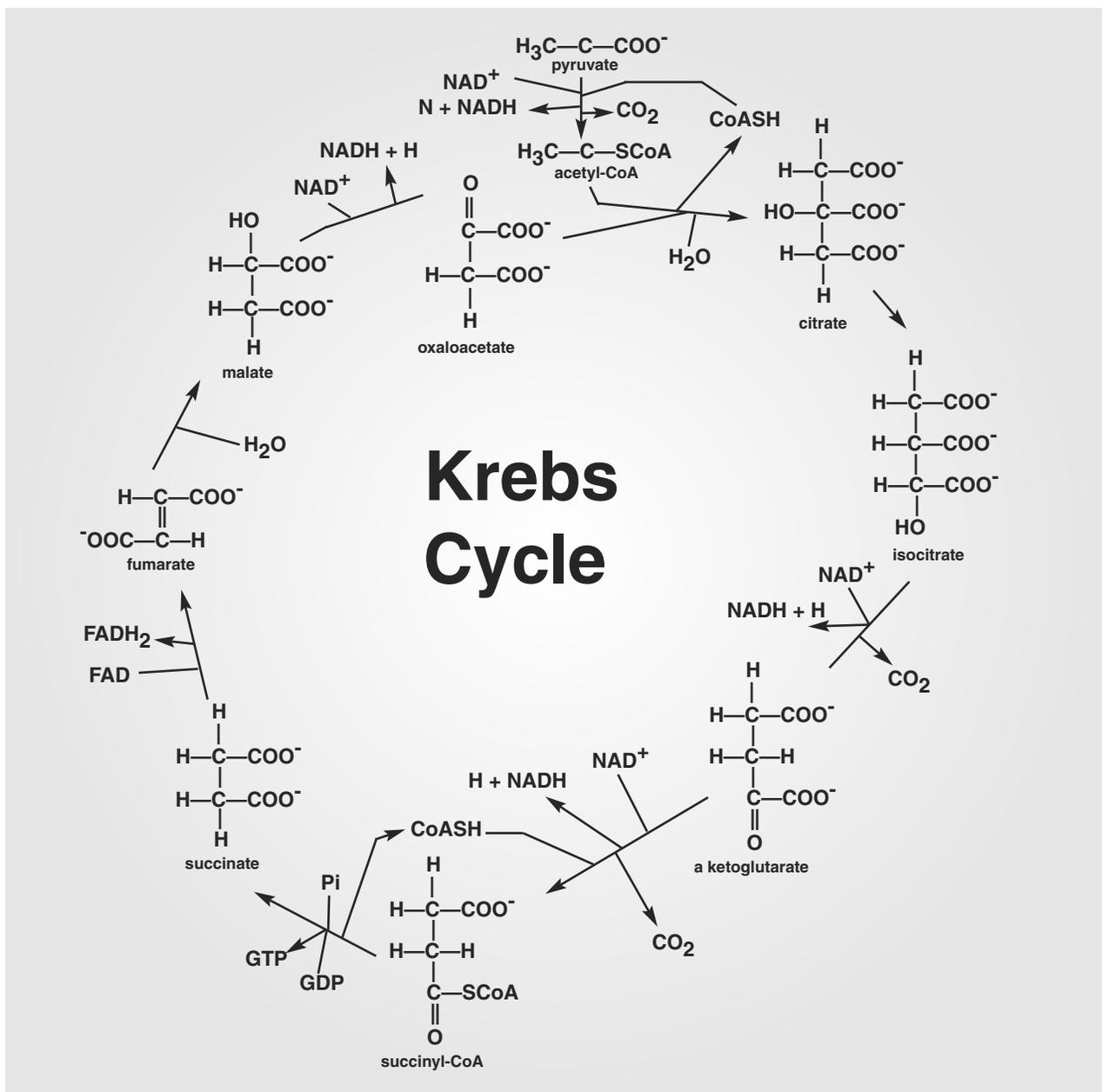
Remember that with diabetes, the dysfunction all starts at your cell level. Fifty to 75 trillion cells make up the organs and tissues of your body. So when sugar cannot effectively enter your cells to be utilized, then sugar in your blood remains too high so that it begins to damage certain organs of your

body. It attaches to the cells of other organs such as your heart, blood vessels, nerves, kidneys, and skin.

Two organs, your pancreas and your liver, are largely responsible for the dysfunction, too. Your pancreas makes both the digestive enzymes and the hormone, insulin.

The hormone insulin has a counter hormone called glucagon. When insulin triggers sugar (sucrose, fructose, dextrose, maltose, corn syrup, caramel color, etc.) to enter cells to be utilized there, the counter hormone glucagon off sets the drop in blood sugar by causing the stored sugars (in the form of glycogen and fat) to be made into more sugar.

However, in case of juvenile or insulin-dependent diabetes, insulin is not made in sufficient quantities by the pancreas. But in the more common Type 2 Diabetes, insulin becomes over



produced, but not effective at the cell membrane as mentioned. This is a condition of insulin resistance, where the liver, muscle, brain, and other organ's cell membranes don't respond to insulin. In both types of diabetes, however, the basic problem results in a high circulating blood sugar level which damages other vulnerable organs as mentioned above.

As I said before, sugar is the energy source for the basic energy machines of each cell called the mitochondria. The basic metabolic process of making energy that is performed by the mitochondria of each cell is called the citric acid, tricarboxylic acid, or "Krebs" cycle. In this process, one molecule of sugar along with the enzymes to drive the reaction turns into energy units (ATP) and carbon dioxide as shown on the previous page (this is extremely simplified from the full version).

The Costs of Diabetes

Diabetes accounts for approximately 20 percent of all healthcare dollars in this country. Persons with diabetes experience elevated risks of a variety of other illnesses including heart disease and stroke; blindness; peripheral nerve disease and nerve pain; kidney damage and failure; and skin disorders.

In 1969, diabetes accounted for **\$2.6 billion** of the healthcare costs in the United States. That seemed like a lot at the time, but it was only the tip of the iceberg. Then, in 1986, the total economic burden of Type 2 Diabetes, including healthcare expenditures and productivity forgone due to disability and premature mortality, was \$19.8 billion.¹

By 1995, the economic burden of diabetes in the United States was a whopping **\$137 billion**. **That's a 5,200 percent increase** over the course of a single generation! Finally, in 2007, it was estimated that diabetes cost us more than **\$174 billion**—or one out of every five healthcare dollars was spent on someone with diagnosed diabetes.

Adding more to the overall cost, diabetics also experience higher risk from a wide variety of other illnesses. These include heart disease and stroke, blindness, peripheral nerve disease and nerve pain, kidney damage and failure, and skin disorders.

And the most frustrating part for a physician such as myself? None of these health problems have to occur. Why? Because diabetes is easily **the most preventable of all the chronic diseases!**

And while all chronic illnesses are similarly rising in total costs, diabetes is the *most* preventable of all the illnesses.²

Risk Factors for Diabetes

Are you aware that *risk factors* and actual *causes* of diabetes are different? This is important to know because you can eliminate *causes*, but risk factors you may not be able to do anything about. Let me explain. Risk factors are findings and associations to an illness, such as lab results, related illnesses, and lifestyle habits which correlate with having or getting diabetes. You could even say this includes the risk factors of the risk factors. For example, any risk factor for sedentary lifestyle (such as owning a TV or feeling you aren't athletic) would also be a risk factor for diabetes. However, we could not say that watching too much TV directly *causes* your blood sugar to go high.

Known *causes* of diabetes actually contribute to the development and progression of diabetes. Known causes of diabetes are anything that worsens normal function of cell metabolism.

Conventional medical wisdom would say that diabetes is caused by your genetic programming. Yet we know that there is always a genetic component to expressing diabetes—which can be reversed through lifestyle modification. In other words, genetic risk is not really the cause. You might say that the cause started several generations ago with poor eating habits and expression of illness, which gets compounded through offspring.

As you read the list of risk factors for diabetes below please focus on the ones that you can do something to change. Knowing the risk factors that you CAN modify or eliminate is what you are interested in, right? These are the risk factors that you can do something about:

- **High blood pressure.** This is caused by inflammatory foods, stressful lifestyle, smoking, or anything else that causes or promotes inflammation at the cell level. The risk for high blood pressure is shared with other risks for diabetes such as obesity and sedentary lifestyle.
- **Known cardiovascular disease.**
- **Lack of physical activity or exercise.** Even if you don't naturally lose weight by exercising, there are several benefits to lowering diabetes risk by keeping fit.
- **Obesity** with its multiple causes and contributors.³
- **Any chronic disease state.** Chronic inflammatory disorders of many types have been linked with enhanced risk for diabetes.⁴
- **Metabolic syndrome.** This will be described in greater detail below.
- **Family history** of diabetes in your immediate family or first degree relative.
- **Symptoms** of low blood sugar: Nausea, blurred vision, weakness, or moodiness after meals.
- **Symptoms** of increased urination, excess thirst, weight loss, blurred vision, or numbness in the toes.
- **High triglycerides**, which are an early sign of a high insulin state.
- **Skin tags**, which has an 80 percent correlation with developing diabetes.
- **Polycystic ovary syndrome**, characterized by obesity, facial hair, and fewer than normal menses.
- **Birthing** a baby more than nine pounds, or history of gestational diabetes.
- **Race/ethnicity:** African American, Native Alaskan, Native Indian, Asian, Hispanic, or Pacific Islander. (Patients with acanthosis nigricans, African-Americans, Hispanics and Asians/Pacific Islanders should be offered screening at an earlier age. Reference: Screening for Type 2 Diabetes. *Diabetes Care*. Vol. 26, Supplement 1, Jan. 2003).
- **Excess anger or depression.**
- **Pesticide exposure:** According to researchers from the National Institutes of Health (NIH), licensed pesticide applicators who used chlorinated pesticides for more than 100 days in their lifetime had a 20 to 200 percent increase in risk for diabetes.⁵ Some of the pesticides used by these workers are known to be used by the general population. Though other insecticides in this study are no longer available on the market, these chemicals persist in the environment and in food products with measurable levels.

More on Pesticide Exposure as it Relates to Diabetes

Diabetes occurs when the body fails to produce enough insulin to regulate blood sugar levels or when tissues stop responding to insulin. More than 23 million Americans have diabetes. The cause of diabetes continues to be a mystery, although genetics and environmental factors such as obesity and lack of exercise appear to play roles.

To conduct the study, the researchers analyzed data from more than 30,000 licensed pesticide applicators participating in the Agricultural Health Study, a prospective study following the health history of thousands of pesticide applicators and their spouses in North Carolina and Iowa. The 31,787 applicators in this study included those who completed an enrollment survey about lifetime exposure levels, were free of diabetes at enrollment, and updated their medical records during a five-year follow-up phone interview. Among these, 1,171 reported a diagnosis of diabetes in the follow-up interview. The majority of the study participants were non-Hispanic white men.

Researchers compared the pesticide use and other potential risk factors reported by the 1,171 applicators who developed diabetes since enrolling in the study to those who did not develop diabetes. Among the 50 different pesticides the researchers looked at, they found seven specific pesticides (aldrin, chlordane, heptachlor, dichlorvos, trichlorfon, alachlor, and cynazine) that increased the likelihood of diabetes among study participants who had ever been exposed to any of these pesticides, and an even greater risk as cumulative days of lifetime exposure increased.

All seven pesticides are chlorinated compounds, including two herbicides, three organochlorine insecticides, and two organophosphate pesticides.

“The fact that all seven of these pesticides are chlorinated provides us with an important clue for further research,” said Kamel. Previous studies found that organochlorine insecticides such as chlordane were associated with diabetes or insulin levels. The new study shows that other types of chlorinated pesticides, including some organophosphate insecticides and herbicides, are also associated with diabetes. The researchers also found that study participants who reported mixing herbicides in the military had increased odds of diabetes compared to non-military participants.

The Agricultural Health Study (AHS) (<http://aghealth.nci.nih.gov>) is a prospective study of licensed pesticide applicators from North Carolina and Iowa recruited in 1993-1997 at the time of license renewal. The cohort includes 4,916 commercial applicators from Iowa and 52,395 private applicators, mostly farmers, from both states. More than 75 percent, or 32,347, of the spouses of married private applicators also enrolled in the cohort. The study was a collaboration of the National Institute of Environmental Health Sciences (NIEHS), the National Cancer Institute (NCI), the Environmental Protection Agency (EPA), and the National Institute for Occupational Safety and Health (NIOSH).

The primary mission of the National Institute of Environmental Health Sciences (<http://www.niehs.nih.gov>) (NIEHS), one of 27 institutes and centers at the National Institutes of Health (NIH), is to reduce the burden of human illness and disability by understanding how the environment influences the development and progression of human disease. For additional information, visit the NIEHS Web site at <http://www.niehs.nih.gov>.

The National Institutes of Health (NIH)—The Nation’s Medical Research Agency is a component of the U. S. Department of Health and Human Services. It is the primary federal agency for conducting and supporting basic, clinical, and translational medical research, and it investigates the causes, treatments, and

cures for both common and rare diseases. For more information about NIH and its programs, visit <http://www.niehs.nih.gov>.

Reference: Montgomery MP, Kamel F, Saldana TM, Alavanja MCR, Sandler DP. Incident diabetes and pesticide exposure among licensed pesticide applicators: Agricultural Health Study 1993 2003, *Amer J Epidemiol*, 2008; 167:1235-46.

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Complications of Diabetes

Just having high blood sugar alone doesn't cause any symptoms of pain or dysfunction. Rather, it is the effect of high blood sugar on your eyes, nerves, kidneys, heart, skin, and immune system that is the real problem. When these organs undergo damage from five to ten years of high blood sugar circulating in the blood stream, then comes pain, suffering, and the resulting high costs.

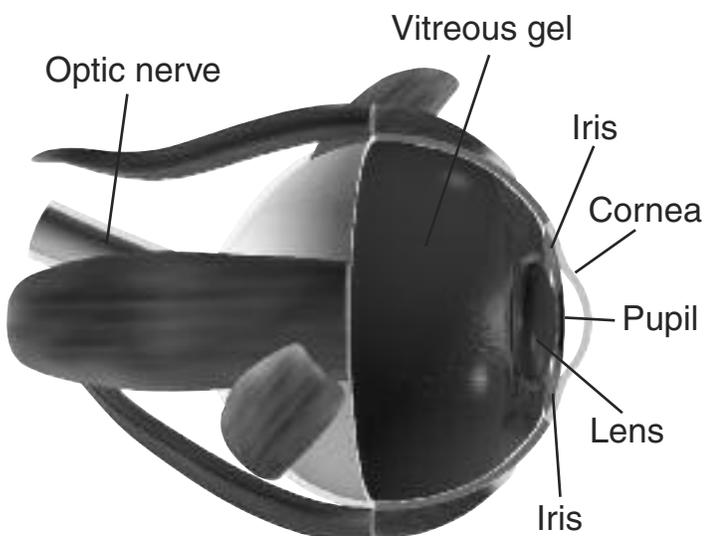
Retinopathy

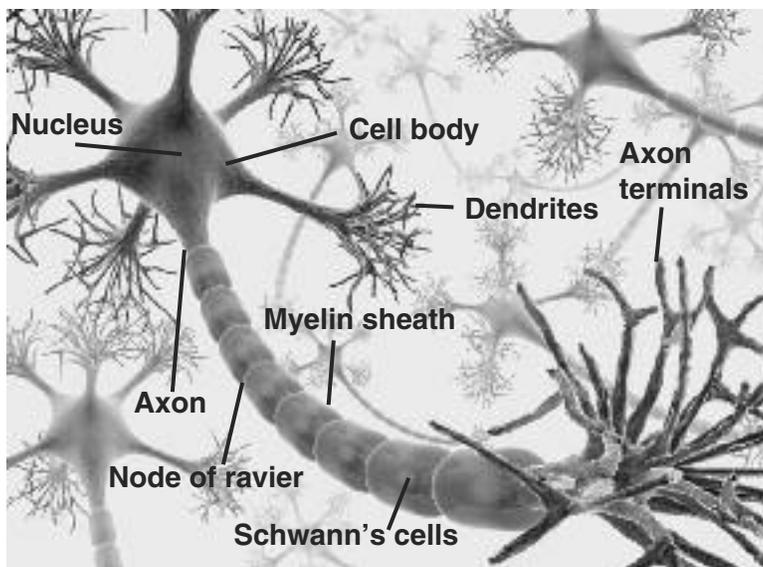
The light-sensitive tissues of delicate nerves at the back of the eye make up the retina. Retinal disease is the most common diabetic eye disease and leads to blindness. In fact, diabetes is the leading cause of new blindness in adults ages 20 to 74.⁶

The changes in the blood vessels of the retina are caused by the constant high blood glucose, and there is an inflammatory process there in which tiny blood vessels swell and burst and block blood flow. Then inflammation ensues, in which a growth of retinal nerve tissues block blood flow further. The key to know is that it develops without symptoms of blurry vision or pain in most cases. Therefore, it is wise to get an examination with your eyes dilated in order to know if intervention is needed before any vision loss occurs.

It was the Diabetes Control and Complications Trial (DCCT) which showed that you can slow the onset and progression of retinopathy by having better control of blood sugar levels. In this study, those who kept their blood sugar levels at or near normal had much less kidney and nerve disease. This translated into reduced need for laser eye surgery.

Laser eye surgery is the conventional medicine treatment of choice to shrink the abnormal blood vessels. In this procedure, the surgeon places 1,000 to 2,000 laser burns in the affected areas of your retina (away from macula where you focus light rays). Although it causes some loss of side vision, color vision, and night vision, laser treatment saves you from going completely blind. It is most effective when done early on in disease





progression. This is the main reason why dilated eye exams are done yearly in diabetic patients.

Neuropathy

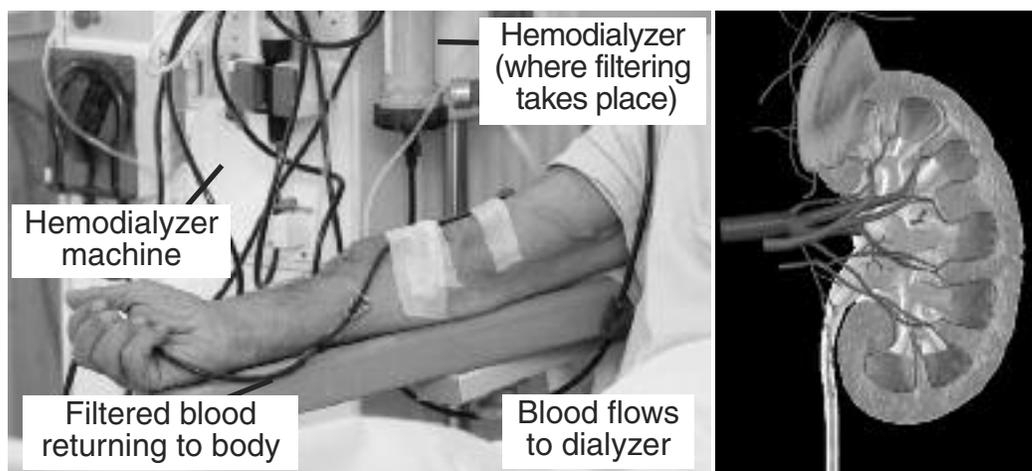
Disease of nerves can result in a variety of illnesses. Nerve weakness disorders such as Multiple Sclerosis and Amyotrophic Lateral Sclerosis (ALS or Lou Gehrigs Disease) are not part of the neuropathy of diabetes. Instead, the neuropathy of diabetes is either a nerve pain disorder or a nerve sensory loss. It is the sensory loss combined with the propensity for infections

that leads to lower extremity amputations. For example, more than 60 percent of all non-traumatic amputations occur among people with diabetes. I remember working at a Veterans Administration hospital during my medical school and residency training. There I saw many amputees—mostly from long-standing uncontrolled diabetes, not from war trauma.

Diabetic neuropathic pain can arise from two different types of nerves: The C-fibers and from A-fibers. The important thing to know is that pain from these two sources is perceived differently and treated differently. The burning, lancinating kind of neuropathy is usually treated with capsaicin cream or the blood pressure pill, clonidine. The deep, dull, and gnawing pain is best treated with antidepressants such as amitriptyline (Elavil®), anti-seizure medicines such as carbamazepine (Tegretol®), gabapentin (Neurontin®) and phenytoin (Dilantin®), or the centrally-acting pain reliever, tramadol (Ultram®). Narcotic pain relievers can always be used as a back-up with caution.⁷ The newest drug for diabetic neuropathy is pregabalin (Lyrica®).

Nephropathy

The kidney nephron is the basic unit of filtration. With long-standing sugar exposure these units become unable to filter the blood to rid uric acid and other metabolic wastes. Not only is diabetes the leading cause of end stage kidney disease, but nearly 44 percent of all kidney failure is caused by diabetes. Diabetic patients are 17 times more prone to kidney disease than the normal population.⁸ When the kidney filtration shuts down due to diabetes, the need for



Controlling Blood Sugar Does Not Lower Cardiovascular Disease Risk

Two large studies, the American ACCORD¹² and the Australian ADVANCE¹³ trials, involving more than 21,000 patients with Type 2 Diabetes, *found totally new findings*: That there is no reduction in heart attack rate and death from the standard therapy of intensive blood sugar control. In fact, the researchers wrote that, “Near-normal glucose control (achieved with the use of combination therapy incorporating heavy use of drugs thiazolidinediones, sulfonylureas, metformin, and insulin) is associated with significantly increased risks of death from any cause and death from cardiovascular causes, the very outcomes the trial was designed to prevent.”

Amazingly, these findings are a surprise to many diabetes experts and go against what we doctors have been preaching for years—that using medications to normalize blood sugar in diabetics will decrease their heart attack risk. In both studies patients were given a variety of drugs, with and without insulin.

These studies instead point to the fact that it takes really addressing the causes of inflammation (through lifestyle) which underlie cardiovascular disease, not just keeping blood sugar in the normal range. These studies are published in the June 5, 2008 issue of the *New England Journal of Medicine* (NEJM).

The American ACCORD study was supported by the NIH’s National Heart, Lung, and Blood Institute (NHLBI). It involved more than 10,000 patients with Type 2 Diabetes. Conducted for only 3.5 years, the study revealed the intensive blood sugar reduction group to have 22 percent *higher* risk of death (54 more deaths), as compared to the standard group, results showing up within two years of the study.

The Australian ADVANCE study involved more than 11,000 Type 2 Diabetes patients who were treated and followed for five years. The study found no reduction in kidney disease risk or heart disease risk among those given aggressive blood sugar control.

In both studies the participants were typical adults with Type 2 Diabetes, with an average age of 62 to 66 years, having had diabetes for eight to ten years, and a median blood sugar (glycated hemoglobin) level of 7.2 to 8.1 percent when they started the study.

This corroborates with an earlier UK study called the UKPDS trial, which similarly showed that reducing blood sugar from a Hemoglobin A1C of 8 percent down to 7 percent did not reduce heart attacks.

kidney dialysis becomes necessary to stay alive.

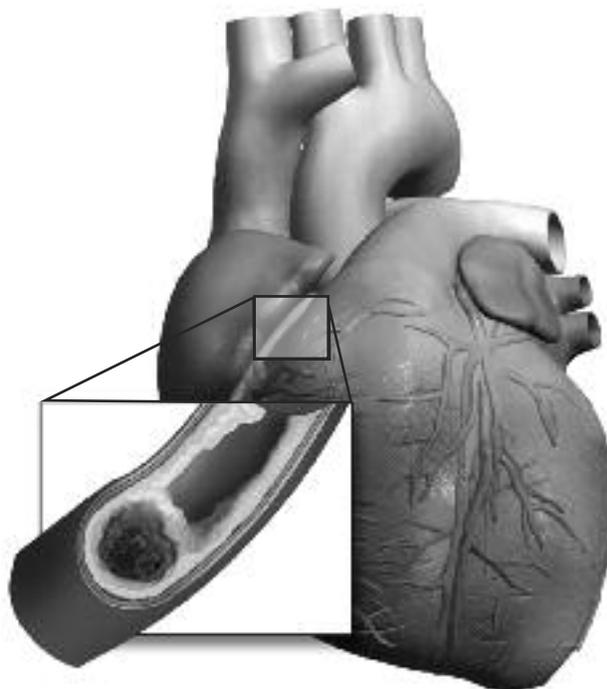
Hemodialysis (filtering the blood) is the most common treatment for kidney failure. A dialysis machine is basically an artificial kidney which is designed to detoxify your blood by removing impurities and metabolic waste. During dialysis, physicians access a large artery in the arm and circulate your blood through the dialysis machine. The purified blood is then returned to your vein as shown.

Heart Disease

Cardiovascular disease is by far the most dangerous and prevalent complication of diabetes. A whopping 65 percent of deaths among people with diabetes are due to heart disease and stroke. Also, persons with diabetes are two to four times more likely to develop heart disease than people without diabetes.⁹

According to two large recently reported clinical trials involving more than 21,000 patients with Type 2 Diabetes, intensive blood sugar control actually slightly *increases* heart attack and death rates.

This means that diabetics still must reduce the causes of cardiovascular disease like the rest of us and not rely on medications to keep their blood sugar in the normal range. In fact, the main risk factors that increase your likelihood of coronary artery disease are the same ones for diabetic patients—namely hyperlipidemia, hypertension, and smoking. Yet for diabetics, they do have additional ones such as high blood sugar and microalbuminemia (protein spilling through the kidneys).



For the patient with Type 2 Diabetes, intervention is similar, too. They must take heed to eat nutrient rich foods, to get consistent physical exercise, and to deal effectively with stressful feelings. Intervention with prescription medications is done by most orthodox medical doctors. This includes keeping blood thin with antiplatelet medications such as aspirin and clopidogrel (Ticlid[®]) and/or anticoagulants such as warfarin (Coumadin[®]). Blood pressure-lowering meds such as angiotensin-converting enzyme inhibitors, angiotensin II receptor antagonists, and beta-blockers are also used heavily. Also, the cholesterol and triglyceride-lowering medications such as “statins” are prescribed, as well as oral anti-diabetic medications to lower blood sugar.¹⁰

Infections

Influenza, colds, bacterial infections, and yeast infections are much more common in patients with diabetes. This is because the immune system is impaired due to long-standing out of control diabetes. The skin is one organ that is commonly affected by this, resulting commonly in bacterial cellulitis, abscesses, and fungal skin rashes. For example, every family physician knows that when a diabetic patient comes in with any of these bacterial skin infections, they must act quickly to get the infection under control before it goes all the way to the blood stream and becomes a life-threatening infection.



Tinea Facialis (ringworm on the face)

The mechanism of increased fungal infections in diabetes has to do with neutrophil (white blood cell) dysfunction.¹¹ This decreased neutrophil function is directly related to a high level of blood sugar. Additionally, weakened small blood vessels give poorer peripheral circulation, which leads to skin ulceration and reduced delivery of neutrophils to skin areas of microbial entry. Fungal infections are less threatening of course. However, there are infectious complications of diabetes including systemic infection with candida (candidiasis) and mucor (mucormycosis), which can get deep into the nose and face tissues. Also, the bacterium *Pseudomonas aeruginosa* can cause deep ear infections we call malignant otitis.

PART II

Diagnosis and Medical Management of Diabetes

Now that you know what this disease we call diabetes is all about, let me explain more about how to know whether you or a loved one has diabetes. Then I'll cover the standard medicinal treatment methods for diabetes.

Discovering Diabetes

Did you know that you may have diabetes, but you won't find out unless you actually go looking for it? Typically, diabetes is discovered because of one or more symptom that is noticed. These symptoms and signs to look for include:

- Frequency of urination or urinating large amounts of urine
- Unquenchable thirst
- Losing weight without trying
- Weakness and fatigue
- Feeling very hungry or tired
- Blurry vision
- Tingling or numbness of hands or toes
- Poor wound healing

Confirming the Diagnosis

Once there is a suspicion of diabetes, it is a simple finger stick blood test that determines whether you have diabetes or not. Normal fasting plasma glucose is below 110 milligrams per deciliter (mg/dl). But when plasma glucose gets in the 111-125 mg/dl range it constitutes "glucose intolerance." Frank diabetes is diagnosed when the fasting plasma glucose is 126 mg/dl or higher, or two after-meal blood sugar values more than 200 mg/dl. Even if you do find your blood sugar to be above these values, it does not mean you are stuck with the diagnosis of diabetes. Why not?—because you may then change what you eat and thus lower

these values into the normal range. This is called becoming “diet-controlled” which is not truly diabetes. In this case, you *would* be diabetic if you were to let yourself eat anything you want. But just like many chronic illnesses, you CAN reverse them and change the way your body works. This is actually altering your genetic predisposition—changing your disease expression. This is very common and is available to all of you.

Managing and Monitoring Blood Sugar

The following tests are used to track the health or deterioration of body organs affected by diabetes:

- Microalbumin urine test (kidney function). Transient microalbuminuria may be caused by exercise, urinary tract infections, recent febrile illness, or short-term hyperglycemia
- Urinalysis (urine infection, kidney function)
- Retinal eye scan (eye retina function)
- Dental examination (teeth infection)
- CMP (comprehensive metabolic panel which includes mineral electrolytes, kidney filtration, and liver enzymes)
- Lipid profile (cholesterol, triglycerides)
- EKG test (heart function—especially looking for heart vessel insufficiency or hidden former myocardial infarction)
- Hgb A1C (described below)

The blood test known as hemoglobin A1C (also known as glycohemoglobin or glycosylated hemoglobin) is the gold standard blood test for following blood sugar control. In addition to frequent finger poke blood sugar testing, the hemoglobin A1C level measures the sugar molecules that are bound to hemoglobin molecules in blood cells. Once a hemoglobin molecule has sugar attached (glycated), it remains that way. It is a direct reflection of the average daily blood sugar levels for the previous three months (life of a blood cell is approximately 120 days).

For many years it has been believed that blood sugar levels will predict suffering and death rates from diabetes (a.k.a. morbidity and mortality). But a recent large study has demonstrated that this is not true across the board—cardiovascular disease is one exception as I explained in the earlier section of this report entitled, “Controlling blood sugar does not lower cardiovascular disease risk.”

Prescription Drugs for Controlling Diabetes

The use of pharmaceutical drugs in the treatment of Type 2 Diabetes is always *after* intervention with nutrition and exercise. The problem with this recommendation is that it nearly always falls short of what is really required for someone to make a true lifestyle change to nutrient-rich raw and whole-foods eating. And when these attempts to get blood sugar under control fail with minor adjustments in diet, then it is only natural for patient and doctor to resort to drugs to control symptoms and manage the disease.

Below I have reviewed the mainstream prescription medications used by doctors today to control blood sugar.

Metformin (Glucophage®)

Metformin originates from the French lilac (*Galega officinalis*), a plant known to lower the symptoms of diabetes.¹⁴ It is now the first-line drug of choice for the treatment of Type 2 Diabetes. Not only is it the best drug for overweight people with heart failure,¹⁵ but it is also the only anti-diabetic medication proven to reduce the cardiovascular complications of diabetes.¹⁶ It acts to reduce the formation of new usable sugar in the blood, a process called gluconeogenesis. Equally important, it increases insulin sensitivity and insulin binding to cell receptors so that blood sugar can be used better by the cells. It also decreases the absorption of sugar from the intestinal tract. Metformin is also used for polycystic ovary syndrome—with a weight-loss effect that is mild.¹⁷

Sulfonylureas

These drugs have been in use since the 1950s. The oldest one still in use is Chlorpropamide (Diabinese®). There are the second-generation drugs called glipizide (Glucotrol®), glyburide (Micronase®, Glynase®, and Diabeta®), and glimepiride (Amaryl®). They stimulate the beta cells of the pancreas to release more insulin. One of these is often combined with metformin.

Rosiglitazone (Avandia®)

This family of drug, the thiazolidinediones, has been shown to decrease insulin resistance along with decreasing certain inflammatory molecules, the interleukins (such as Interleukin-6). They also raise the good cholesterol (HDL) and decrease triglycerides. They can lower HbA1c levels 1 to 2 percentage points.¹⁸ Unfortunately, they have also been associated with serious side effects including weight gain, leg swelling, worsening heart failure, and liver abnormalities.¹⁹

Repaglinide (Prandin®) and Nateglinide (Starlix®)

Repaglinide and Nateglinide (Starlix®) lower blood glucose by stimulating the release of insulin from the pancreas. They achieve this by opening the cell's calcium channels, and the resulting calcium influx induces insulin secretion. Therefore, they lower blood sugar by causing the pancreas to produce insulin. They are taken 30 minutes before or just before starting each meal.

Acarbose (Precose®) and Miglitol (Glyset®)

These are the alpha-glucosidase inhibitors. The enzyme *alpha glucosidase*, is an intestinal wall enzyme that releases glucose from large carbohydrates for absorption. Therefore, they block sugar from coming into the blood stream from food because the carbohydrates are not broken down into glucose molecules. It is only a short-term effect to decrease blood glucose levels and over time has only a small reduction in Hgb A1C level.

Sitagliptin (Januvia®)

A new medication called Sitagliptin (Januvia®) helps improve Hgb A1C levels without causing low blood sugar symptoms (hypoglycemia) as a side-effect. Sitagliptin does not tend to cause weight gain and has a neutral or even a positive effect on blood cholesterol levels.

Insulin

The hormone insulin strongly affects metabolism of glucose in the body. It causes the cells of the liver, muscle, and fat to take up glucose from the blood. It then stores glucose as glycogen in the liver and muscle, and it stops the use of fat as an energy source. When insulin is low or absent, glucose is not taken up by cells so that the body begins to use fat as an energy source.

Patients with Type 1 Diabetes mellitus depend on external insulin (most commonly injected subcutaneously) for their survival because the hormone is no longer produced by the pancreas. Patients with Type 2 Diabetes mellitus either have relatively low insulin production, or eventually they may have lots of insulin, but the cells are resistant and no longer respond well to the insulin that is present.

According to current statistics in conventional medicine, 80 percent of Type 2 Diabetics will eventually require insulin as the disease progresses.²⁰ This is because most all physicians only offer pharmaceutical drugs as the answer to controlling blood sugar.

New Drugs for Diabetes

Pramlintide (Symlin®) is a synthetic form of the insulin-like hormone amylin. Amylin works in combination with insulin and glucagons to maintain normal blood glucose levels. Pramlintide injections taken along with meals have shown only a modest improvement in the Hgb A1C. Along with exenatide (below) and metformin, pramlintide usually causes a mild weight loss.

Exenatide (Byetta®) is the first in a new class of drugs called incretin mimetics. Exenatide is a synthetic version of a naturally occurring hormone that lowers blood glucose levels by increasing

Would you choose surgery for heart disease reversal?

According to the *American College of Cardiology/American Heart Association 2004 Guideline Update for Coronary Artery Bypass Graft Surgery*, it is better to get surgery for heart disease than to change your lifestyle! To this I say, absolutely NOT! In fact, this indication of the “standard of care” for medicine today showed up on a *Family Practice Board Review* practice examination. It read as follows:

In the diabetic patient with coronary artery disease, which form of therapy provides the best survival benefit?

- a. medical therapy
- b. lifestyle modifications
- c. percutaneous transluminal angioplasty (PTCA)
- d. coronary artery bypass grafting (CABG)

The answer was: d. coronary artery bypass grafting (CABG)

insulin secretion. One unique thing is that it only works when there is an elevated blood glucose level so that it does not drop the blood sugar (hypoglycemia). Exenatide is also injected along with meals. It can replace the combination of metformin and a sulfonylurea when these together are not controlling blood sugar.

Metabolic Activation Therapy (MAT)

MAT, also known as pulse insulin therapy or cellular activation therapy produces a uniquely superior improvement of diabetes that is not seen with other I.V. or subcutaneous insulin infusions.

MAT was developed by Dr. Thomas T. Aoki in the 1970s while he was a researcher at the Joslin Research Laboratory, affiliated with Harvard Medical School. This is a once-a-week treatment consisting of six hours of programmed intermittent intravenous insulin therapy along with oral glucose. This therapy mimics and enhances the effects of natural insulin secretion. The primary purpose of MAT therapy is not just good glucose control, but rather an improvement in the altered aspects of biochemistry/physiology that is responsible for diabetic complications. This therapy improves glucose oxidation in the liver and improves glucose metabolism throughout the body with a lasting effect for several days.

It is performed in a physician’s office or clinic. During the remainder of the week, the patient remains on his/her usual treatment to control blood sugar, whether they are Type 1 or Type 2.

In normal, as well as in diabetic individuals, important organs rely on fatty acid metabolism for 70 to 80 percent of their fuel. However, the use of fatty acids requires more oxygen at the cellular level than using glucose. Here is where MAT makes a difference: It permits organs to use glucose as an energy source much more than usual and thus decreases the organ’s oxygen requirements. Therefore, MAT has been shown to permit heart, skeletal muscle, skin, and other organs to function more normally and even to repair damage and heal.

To better understand MAT and conventional insulin therapy, the chart below contrasts the two types of therapy and the levels of insulin available to the liver.

Two types of therapy in Type 1 Diabetes

	MAT	Conventional Insulin Therapy
Insulin injection site	Directly into a vein	Subcutaneous tissue
Insulin reaches the liver	Rapidly	Slowly
Level of Insulin available <u>to the liver</u>	Very High (200-1000 microU/ml)*	Very Low (15-20 microU/ml)*
Pattern of insulin delivery to the liver	Pulses—sharp spikes	Gradual rise and fall

* microU /ml = one millionth of a Unit of insulin per milliliter.

Some Prescription Drugs Worsen Diabetes

The following medications are known to *worsen* blood sugar in diabetics:

- Prednisone (strong anti-inflammatory)
- Terbutaline (used to stop preterm labor or reverse asthma attacks)
- Hydrochlorothiazide (diuretic)
- Niacin (B vitamin)
- Phenytoin (anti-seizure medication)²¹

PART III

Metabolic Syndrome and VAT

What Exactly is Metabolic Syndrome?

Around the world, medical cases involving “pre-diabetes” and diabetes are increasing at a staggering rate. In fact, of all the health problems linked to a diet filled with refined and processed foods, these two illnesses are definitely the most prevalent ones.

I’ll explore the facts about “pre-diabetes” and diabetes so you can understand both your risks and your options. If you want to slow blood sugar problems—or even reverse them—this is must-know info!

I’ll address visceral adipose tissue (VAT) too, and how common toxins and daily stress contribute to it. I’ll also show you how refined sugars trigger your body’s production of inflammatory molecules in the body we call adipocytokines, the main chemical that fuels the fire of nearly every chronic illness known!

If you’re middle aged or older, it’s highly possible that you’re already “pre-diabetic” and don’t even know it. Why? Because it’s estimated that one in four American adults over age 30 is “pre-diabetic” with the number growing every day. Making matters worse, this health-threatening condition is often overlooked by mainstream physicians.

*Metabolic Syndrome*²²

Metabolic syndrome is also called an “insulin resistance syndrome,” a “pre-diabetic” condition, or a “pro-inflammatory state.” This condition is easily and often overlooked by physicians. It is estimated that metabolic syndrome affects approximately 45 million people in the United States—as many as one in four American adults over age 30!

The disease is a cluster of conditions—including elevated blood pressure, elevated insulin levels, excess body fat around the waist, or visceral adipose tissue (VAT), elevated triglycerides, low HDL levels—and a few more conditions that lead to greater risk of Type 2 Diabetes and cardiovascular diseases. According to the National Cholesterol Education Program guidelines, metabolic syndrome is characterized by three or more of the following:

- Abdominal obesity, also called VAT (visceral adipose tissue). These are the apple-shaped overweight men and women with visible excess fat around the middle. I’ll explain this on page 22.

Elevated Blood Viscosity Strongly Linked to Metabolic Syndrome

An additional indicator of metabolic syndrome, according to the May 15, 2008 *International Journal of Cardiology*, demonstrates a strong relationship between elevated blood viscosity (easy clotting) and the severity of metabolic syndrome.

Cardiologist, Lei Zhang studied 1,400 middle aged adults and categorized them into four groups based on their blood viscosity levels. Not only were subjects with metabolic syndrome twice as likely to be in the highest viscosity group compared to the lowest, but those with four metabolic syndrome components were almost *five times* more likely to be in the highest blood viscosity group compared to the lowest.²³

The study authors stated that viscosity (blood thickness), “is strongly related to the severity of the metabolic syndrome and that [these] parameters could be added to the indicators of the metabolic syndrome” as well as targeted to reduce the risk of cardiovascular diseases.

Blood viscosity is associated with many cardiac risk factors including high blood pressure, LDL cholesterol, and obesity. A study published in the *International Journal of Obesity* noted obese patients (BMI > 28) had, on average, 15 percent higher diastolic blood viscosity than non-obese healthy controls.²⁴

- High triglycerides, low HDL cholesterol, and high LDL cholesterol. You can get these tested at your doctor’s office as part of a normal screening blood test.
- Hypertension. If you have high blood pressure, you will want to be screened for high blood sugar and lipid abnormalities.
- Insulin resistance, which is determined by finding high insulin levels in the blood. This is not a usual test done at your doctor’s office, but can be sent out to a specialty reference lab.
- Glucose intolerance, best determined by a fasting and a one-hour post-glucose load blood sugar test.
- Easy clotting. Blood tests that correlate with this are high fibrinogen or plasminogen activator inhibitor-1 levels.
- Pro-inflammatory state, easily measured as elevated C-reactive protein (CRP) blood levels, which is now commonly added into standard screening lab work.
- Limited physical activity, which contributes to VAT.
- Aging.
- Processed, refined, and otherwise nutrient-devoid foods.

Of all these, the two main risk factors for metabolic syndrome are abdominal obesity (VAT), which is totally preventable and reversible; and insulin resistance, which is mostly preventable and reversible. Now let me explain more details about the ill effects of excess belly fat.

The Hidden Perils of Abdominal Fat (VAT)

Abdominal fat is also known as VAT (or visceral adipose tissue). This should never be confused with subcutaneous fat, found below the skin in the normal healthy individual. The fact is, belly fat is far more predictive of poor health. Over the last ten years, scientists have studied belly fat cells and the findings are quite alarming. These cells release chemicals that viciously attack your normal tissues and create deadly inflammation—the very cause of diabetes.

That's the bad news. The good news is this inflammatory state is completely reversible by eating nutrient-rich whole foods.

Visceral Adipose Tissue (VAT) and Adipocytokines

The accumulation of visceral adipose tissue (belly fat), has been proven to promote heart vessel disease, hypertension, Type 2 Diabetes, high blood cholesterol, and metabolic syndrome.²⁵ As opposed to subcutaneous fat (below the skin), belly fat is far more predictive of ill health. It is now known that these belly fat cells secrete bioactive substances, called adipocytokines, that cause inflammation, much like cells of the immune system fight infection. Except that these adipocytokines do not fight infection—instead they fight your normal tissues!

The names of some of these adipocytokines are visfatin, tumor necrosis factor-alpha, plasminogen activator inhibitor type 1, and heparin binding epidermal growth factor. Inside the fat cells of every obese abdomen is a reservoir of these adipocytokines, which wage the war of inflammation—the very cause of diabetes mellitus and cardiovascular disease.²⁶ Sound horrible? Now I'll let you in on the good news.

The good news is that there are also the “good” adipocytokines which reduce inflammation. One of these good guys is adiponectin, a collagen-like protein which is notably anti-atherogenic and anti-diabetic. But the best news of all is that you can turn on or turn off the good or the bad adipocytokines just by your nutritional state! I don't mean by the *amount* of food you get each meal. What I am talking about is the amount of nutrient-rich foods you eat. Inflammatory foods such as refined sugars, refined oils, and any other junk food you consume each meal turn on the bad adipocytokines. And, it has been proven that as your fat around the middle increases, you over-secrete bad adipocytokines and under-secrete the good adiponectin. This directly results in laying the foundation for metabolic syndrome, diabetes, cardiovascular disease, and cancer.

However, when you reduce your waist circumference to normal size, you improve your cell receptor's sensitivity to insulin, which allows glucose to enter the cell to be utilized—a necessary function for you to live. Reducing your abdomen fat also improves your cholesterol levels. But even more importantly, you reduce your chronic disease and heart disease risk.²⁷ And it only takes a modest weight loss for the person with VAT to substantially improve their metabolic profile.²⁸

The most accurate way to correlate all health risks that overweight or obesity conditions cause is by measuring waist circumference, rather than body mass index (BMI). Optimal health corresponds with a waist to hip ratio below 0.7 for women and 0.9 for men. The bottom line is that the healthy flat belly is best for your health and is not just for looks!

PART IV

Foods That Improve Diabetes and Metabolic Syndrome

The real treatment for diabetes begins with what you put into your mouth every day. Therefore, to learn about nutrient rich foods and how to prepare such foods that you can enjoy will be the key to your success. There is an entire strategy you must learn to be able to do this effectively. You know that just reading one of the thousands of recipe books and diet books available at book stores today will not be enough for a real lifestyle change. That is why I created the *90 Days to True Health™*, comprehensive program for lifestyle change to truly optimize your health. If you're ready to make some healthy changes to your lifestyle... if you want to undo some of the damages of bad eating habits... and if you're ready to lose weight and keep it off—this is the perfect system to do so. I will explain this program in greater detail later in this report.

Foods to Eat and Foods to Avoid

To better understand how to prevent and reverse diabetes, let me tell you more about foods to eat and foods to avoid for health. The foods to eat are the foods highest in micronutrients while being lowest in calories. This I call food concentration, or nutrient density. Below is a chart that depicts the foods highest (score = 100) in micronutrients while being lowest in calories. At the bottom of the chart are foods you know and love, which are the refined and processed foods that cause chronic illness over time. Did you know that the USDA reported that 65 percent of our nation's total food consumption is from refined white flour and refined sugar products? According to 2000 USDA statistics, each year the average adult consumes:

- 100 pounds of refined sugar
- 55 pounds of fats and oils
- 300 cans of soda pop
- 200 sticks of chewing gum
- 5 pounds of potato chips
- 7 pounds of pretzels, corn chips, and popcorn
- 18 pounds of candy

- 20 gallons of ice cream
- 50 pounds of cakes/cookies

If you eat like the average American, you are addicted to the taste and the low price of refined foods. It has become the American way, so don't feel bad. Just learn what you can do differently from here on.

Consider the foods that fill up that bottom layer of the government's food pyramid. It is mainly made up of starchy grains. For some examples, starchy foods like rice, French fries, potato chips, white breads, pastas, and crackers quickly turn into sugars in the body. These carbohydrates are essentially low glycemic index sugars, though they are absorbed more slowly into the blood stream than sugars.

Sweet foods like honey, syrup, candy, fruit juice, carbonated drinks, alcohol, cakes, and cookies are high glycemic sugars that are quickly absorbed into your blood stream. Remember, these carbohydrates and sugars have almost no micronutrients (vitamins, minerals, enzymes, antioxidants, fiber, and healthy oils) to optimize cell function. So they overload your body with glucose. The constant sugar overload eventually takes a toll on your body, contributing to most all chronic illnesses. Allergies, ADHD in children, depression, fatigue, sinus infections, and even irritable bowel syndrome are worsened by high sugar intake, as I will explain in greater detail further on in this report.

For sure, you know that nutrient-rich foods ARE NOT the following foods, which I call the "foods to avoid." They are:

- all refined sugars
- white bread
- white rice
- processed meats
- processed cheeses
- dairy milk
- juices that are not fresh juiced
- hydrogenated and trans-fatty fried foods
- processed and altered foods that come in a box, can, bottle, or package (examples are crackers, cookies, pudding, sodas, miracle whip, fruit snacks, most cold cereals, TV dinners, frozen pizzas, and the list goes on).

But now you might ask, "What CAN I eat and drive my body to optimal health?" The answer to that question is more complex than a simple list. Why?—because it is in the LEARNING HOW to put these foods into your lifestyle that makes any real difference. You could probably list them, right? But do you eat nutrient-rich foods consistently and love eating them? That is why I am so excited to tell you about my *90 Days to True Health™* program (later in this report).

In contrast, consider what your body would feel like once you learned to implement tasty meals mostly from foods high on the nutrient concentration chart on the following page.

Nutrient Concentration Chart

Most Nutrients per Calories = 100 Least Nutrients and highest in Calories = 0

100	Raw leafy green vegetables (darker greens have more nutrients) Kale, mustard greens, spinach, Swiss chard, parsley, dark leaf lettuces, collard greens
95	Solid green vegetables Artichokes, asparagus, broccoli, Brussels sprouts, sprouted grains, cabbage, celery, cucumber, peas, green beans, peppers, zucchini
80	Non-green, non-starchy vegetables Beets, mushrooms, onions, garlic, tomatoes, yellow/red peppers, water chestnuts, cauliflower
60	Beans and legumes Kidney beans, red beans, black beans, navy beans, lima beans, soybeans, black-eyed peas, lentils
50	Fresh fruits Fresh fruits of all types; dried fruits have a higher glycemic index
35	Starchy vegetables White potatoes, red potatoes, sweet potatoes, squash, pumpkin, turnips, corn, carrots, chestnuts
30	Whole grains Barley, buckwheat, millet, oats, brown rice, wild grain, quinoa, wheat
25	Raw nuts and seeds
20	Fish
18	Unpasteurized fresh dairy, fermented cheeses
15	Eggs, fowl (e.g. chicken, turkey), wild meats
10	Fat-free dairy
8	Red meat
5	Full-fat dairy
3	Processed cheeses
2	Refined white flour
1	Refined oils
0	Refined sugars

The Glycemic Index of Foods

One important food in diabetes and metabolic syndrome is sugar. First I'll discuss the glycemic index and then explain which sugars are worst and best for health.

According to USDA data in 1980, every person in America consumed on average 140 pounds of pure refined sugar (in addition to the sugar already in foods). And with the public's growing awareness that refined sugar is not healthy, it is sad to say that the advertisers have won out—because refined sugar consumption steadily increased by 42 percent to a whopping 200 pounds in 2004!

Refined sugary foods are by far the most inflammatory—not to mention addictive! This happens when you eat them on a regular basis and in relative high amounts per meal. Because sugar comes in many different forms, it's important to be able to identify those with the highest nutritional value and implement them into a whole-foods diet. Furthermore, you need to know which types of sugar have the lowest nutritional value so you can avoid them as much as possible! Thus, as a first step to identifying sugary foods to avoid, you need to understand where they rank on the **glycemic index**.

The glycemic index (GI) is a relative ranking of carbohydrates (sugars) on a scale from 0 to 100 according to how rapidly they are absorbed and how high they raise blood sugar levels after eating. For example, white sugar (sucrose) has the highest glycemic index score at 100. Low-GI foods have slow absorption and produce gradual rises in blood sugar and therefore only minimally trigger insulin surges. This lowers insulin resistance, lowers metabolic syndrome, and lowers propensity to belly fat (VAT).

Sucrose and Other Refined Sugars

As you may remember, white sugar (sucrose) and white flour foods include most all store bought cookies, pastries, muffins, cakes, donuts, pies, ice cream, sodas, sugary cold cereals, instant cereals, etc. These are also the ones that list “sugar” or “high fructose corn syrup” in the first three ingredients on the package.

Below are some examples of refined sugars to beware of and avoid if at all possible. They are also the ones most devoid of nutrients and are absorbed most rapidly. These sugars trigger insulin surges in the blood because of their high glycemic index and inflammation in body tissues over time:

- *Sucrose*: White, refined table sugar.
- *Confectioner's Sugar*: Powdered sugar.
- *Brown Sugar*: Sucrose crystals from molasses syrup.
- *High Fructose Corn Syrup*: Highly refined sugar source.
- *Dextrose*: Made from cornstarch.
- *Invert sugar*: Glucose + fructose.

As you know, more than half of grocery store children's foods with pictures or names of fruit on the outer packaging actually contain no fruit at all! The food products that falsely advertise real fruit are mostly cereals and yogurt. You've seen them—fresh fruit (you'll see raspberries, blueberries, and strawberries the most) blown up in size sitting in a bowl of cold cereal and milk. Of 37 top grocery store products that show pictures of fruit or used the words “fruit” or “fruity” on the packaging, 19 of these have no real fruit ingredients! You'll continue to see TV commercials that unashamedly push high sugar and high trans-fatty foods to our nation.

In contrast, stevia powder, derived from a small plant native to South America, has been used for centuries by the Paraguayan Indians to sweeten their bitter tribal beverages. In Japan, stevia comprises about 40 percent of their sweetener market. Yet, in the U.S., stevia can only be sold as a dietary supplement and cannot be labeled as a sweetener, even though it has no evidence of being toxic. Do you suppose the processed sugar industry has anything to do with this FDA finding?



Adverse Health Effects of Sugar: What Has Science Proven?

According to peer-reviewed scientific literature, refined sugar has many ways in which it destroys your health. There are more than 100 separate studies demonstrating the adverse effects of sugar, such as immune system suppression... impaired mineral absorption... skin age acceleration through decreased elasticity... worsening cancer growth... and even weakening eyesight. Below are 18 categories in which sugar has been proven to harm you. This time, I have included the scientific references in case a friend challenges me on this. Check out this brief list:

Sugar weakens your immune system: Subtle as it may seem, consuming refined sugar has the real effect of allowing colds and flu viruses to last longer, slows healing time from injury, and actually “acidifies” the already acidic tissues in these illness states. I routinely encourage whole foods, herbal teas, healthy fluids, extra rest, and stop all refined sugars during an acute illness.

- Sugar can suppress the immune system (*American Journal of Clinical Nutrition*, Nov 1973)²⁹
- Sugar helps reduce your defense against bacterial infection (*Dental Survey*, 1976)³⁰

Sugar worsens mental functioning and behavior: I know at least for me, my ability to focus and concentrate is clearly impaired after a big dessert—I’d rather just take a nap! Yet refined sugar is well known to affect behavior of children, too.

- Sugar can cause hyperactivity, anxiety, difficulty concentrating, and crankiness in children (*Journal of Abnormal Child Psychology*, 1986)³¹
- Sugar worsens the symptoms of children with attention deficit hyperactivity disorder (ADHD) (*Journal of Pediatrics*, Feb 1995)³²
- Sugar reduces learning capacity (*NeuroScience*, 2002)³³

Sugar accelerates aging of skin and connective tissues: I suppose this is true largely because if you are eating sugary junk food, your tissues aren’t getting the lean protein and nutrients it takes to

function optimally. Yet there are even direct adverse effects of sugar on connective tissue according to the literature.

- Sugar causes premature aging with a loss of tissue elasticity and function which worsens the more sugar you eat over time (*Annals of the New York Academy of Science*)³⁴
- Sugar can make our skin age by changing the structure of collagen proteins (*Journal of Clinical Investigation*, 1993)³⁵
- Sugar can make your tendons more brittle (*Essence*, 1992)³⁶

Sugar leads to/or increases most all cancers: In caring for the cancer patient it is well known that refined sugar “feeds cancer.” On the contrary, nutrient-rich foods (juiced veggies, raw, and cooked produce of all kinds) are part of the nutrition needs in order to overcome cancer and the literature is full of evidence of this from experimental and clinical studies.

- ovaries (Tohoku University School of Medicine, *Holistic Health Digest*, Oct 1982)³⁷
- stomach (*European Journal of Epidemiology*, 1995)³⁸
- colon (*Cancer Causes & Control*, 1994)³⁹
- gall bladder (*International Journal of Epidemiology Applied*, 1993)⁴⁰
- lung (*Nutrition and Cancer*, 1998)⁴¹
- prostate (*British Journal of Cancer*, 1999)⁴²
- breast (*Cancer Causes & Control*, 2002)⁴³
- small intestine (*International Journal of Cancer*, 1999)⁴⁴
- larynx (*International Journal of Cancer*, 2002)⁴⁵
- stomach (*American Journal of Clinical Nutrition*, Dec 1999)⁴⁶
- rectum (*International Journal of Cancer*, 1998)⁴⁷
- uterus (*Cancer*, 1993)⁴⁸
- kidney (*European Journal of Cancer*, 1996)⁴⁹
- liver (*Archives of Toxicology. Supplement*, 1987)⁵⁰
- plus, sugar causes free radicals and oxidative stress (*Metabolism*, Feb 2000)⁵¹

Sugar weakens eyesight: I hate to take away your dessert, but there is evidence that sugar actually does adversely affect eyesight.

- Sugar can weaken eyesight (*VM Newsletter*. May 1986)⁵²

Sugar causes tooth decay: Have you ever seen the photos of the primitive people before—and then the next generation after they began to consume refined sugar from the industrialized nations in the early 1900s? In his book entitled, *Nutrition and Physical Degeneration: A Comparison of Primitive and Modern Diets and Their Effects*,⁵³ you’ll see how their healthy strong white teeth became severely decayed and misaligned in the first generation born to those eating refined sugar. Bacteria love to feed on the sugar and create acids to break right through any tooth with relatively weak enamel.

- Sugar can cause tooth decay and periodontal disease (FDA Report of Sugars Task Force, 1986)⁵⁴

Sugar contributes to obesity (in case you weren't sure on this one!): No explanation needed on this one...

- Sugar contributes to obesity (*British Medical Journal*, 1989)⁵⁵
- The rapid absorption of sugar promotes excessive food intake in obese subjects (*Pediatrics*, Mar 1999)⁵⁶
- Sugar can increase the total amount of food consumed (*Journal of Nutrition*, 2003)⁵⁷
- The body changes sugar into two to five times more fat in the bloodstream than it does starch (*Nutrition Health Review*, 1985)⁵⁸

Sugar worsens your joints: Anyone with fibromyalgia and arthritis will tell you that high sugary meals worsen their symptoms. Yet there is even evidence that refined sugar weakens joint integrity along with setting up for inflammation there.

- Sugar can cause arthritis (*Lancet*, Feb 1986)⁵⁹
- Sugar can increase your risk of gout (*Sweet and Dangerous*, 1974)⁶⁰

Sugar contributes to lung, skin, and allergy problems: By eliminating refined sugar from the diet, several of my patients have dramatically slowed allergic-related symptoms of the lungs, skin, mucus membranes, and digestive tract. Your body doesn't want it—it wants the real thing found in natural whole foods instead.

- Sugar can cause asthma (*Lin Chuang Er Bi Yan Hou Ke Za Zhi*, Aug 2002)⁶¹ and (*American Journal of Clinical Nutrition*, Nov 2004)⁶²
- Sugar can cause emphysema (*Journal of Gerontology*, 1990)⁶³
- Sugar can contribute to eczema in children (*The Saccharine Disease*, 1974)⁶⁴
- Sugar causes food allergies (*New York: Lick the Sugar Habit*, 1988)⁶⁵

Sugar feeds yeast infections with Candida Albicans: If you've ever baked bread, you know what happens to the yeast after you put the white sugar in: It starts foaming and growing, right? Therefore, a yeast cleanse diet is one in which you avoid all refined sugar and white flour products (which get converted quickly to sugar in the digestive tract). I've personally talked to several patients who's symptoms ranging from mental fogginess and depression to fatigue and pain have been eliminated just by going on a "Candida cleanse" protocol (diet and supplements).

- Sugar greatly assists the uncontrolled growth of Candida Albicans (*The Yeast Connection*, 1984)⁶⁶

Sugar worsens multiple sclerosis: These patients always improve symptoms by eliminating refined sugar foods from their diet.

- Sugar worsens multiple sclerosis (clinical experience)

Sugar increases blood pressure: Though I don't know the exact mechanism of why this is true,

I will test this out clinically with my patients by recommending no refined sugar to assist in lowering blood pressure along with other lifestyle changes.

- Sugar can increase the systolic blood pressure (*Journal of the American College of Nutrition*, 1998)⁶⁷
- Sugar causes high blood pressure in obese people (*Diabetes Mellitus, a Fundamental and Clinical Text*. 2nd Edition, 2000)⁶⁸

Sugar worsens diabetes and metabolic syndrome: This is obvious, as diabetes is a condition of too much sugar circulating in the blood.

- Sugar contributes to diabetes (*Federal Protocol*, 1974)⁶⁹
- Sugar can cause metabolic syndrome (*American Journal of Clinical Nutrition*, Oct 2004)⁷⁰

Sugar contributes to atherosclerosis: The inflammatory effect of refined sugar in the body contributes to atherosclerosis as well as many other pathways of inflammation.

- Sugar can cause atherosclerosis (*Circulation Research*, Mar 1999)⁷¹
- High sucrose diets of subjects with peripheral vascular disease significantly increase platelet adhesion (*Postgraduate Medicine*, Sept 1969)⁷²

Sugar intake correlates with increased rates of Parkinsonism: Once again, I wasn't aware of this, yet it makes sense if the nerve tissues of the brain in Parkinson's disease suffer from an inflammatory state—which sugar enhances.

- Sugar intake is higher in people with Parkinson's disease (*Neurology*, Sept 1996)⁷³
Sugar can cause migraine headaches: I've even experienced this!
- Sugar can cause headaches, including migraine (*Lancet*, 1979)⁷⁴
Sugar can feminize men: One real reason not to feed our boys so much sugary foods!
- Sugar increases estradiol (the most potent form of naturally occurring estrogen) in men (*Annals of Nutrition and Metabolism*, 1988)⁷⁵

Sugar triggers salt and water retention: I may not have directly known why patients lose weight so fast by going off sugary foods and sodas!

- Sugar induces salt and water retention (*CCL Family Foundation*, Nov-Dec 1993)⁷⁶

Sugar contributes to varicose veins: Just like other connective tissues, I can see how sugar can contribute to the weakening and expansion of veins under pressure.

- Sugar causes varicose veins (*On the Causation of Varicose Veins*, 1960)⁷⁷

Sugar intake perpetuates intestinal disorders: I know this for a fact! Every time I eat refined sugar my small intestines (remember, I don't have a large intestine!) churn and gas is produced soon thereafter!

- The higher the sugar consumption the more the chance of getting irritable bowel syndrome (*Scandinavian Journal of Gastroenterology*, 1983)⁷⁸

Artificial Sweeteners

Artificial sweeteners are even worse sugars than the refined sugars—except that they are usually only consumed in relatively tiny amounts. Artificial sweeteners are being reported to the government’s adverse foods department in astoundingly high volumes—as much as 75 percent of all food complaints nationwide! These synthetic chemicals fake the brain into feeling satisfied from sugar. They include acesulfame K (Sunette®), aspartame (NutraSweet®), saccharin (Sweet’N Low®), sucralose (Splenda®), and Equal® (a combination of aspartame, dextrose, and maltodextrin).

Ralph G. Walton, M.D., Chairman of the Center for Behavioral Medicine and Professor of Clinical Psychiatry at the Northeastern Ohio Universities College of Medicine reviewed 164 studies on the safety of aspartame, of which 74 studies were sponsored by companies promoting aspartame for profit and 90 studies were funded by independent (non-aspartame industry) money. Of the 90 independent studies, 92 percent identified one or more serious health problems with aspartame. And just to show you how deceptive and controlling “clinical trials” can be for ulterior motives, of the 74 industry-sponsored studies, all of them (100 percent) claimed there were no problems found with aspartame! Even worse, six of those “independent” studies were FDA-sponsored and not really independent because a number of FDA officials took up employment with the aspartame industry immediately following aspartame’s FDA approval for its use in the food market (including the former FDA Commissioner). This pattern from clinical trials is repeated in many areas of the food and health care industry.

Least Healthy and Most Healthy Sugars

Below are some examples of sugars ranging from least healthy to more healthy. The least healthy sugars are the most refined, the most devoid of nutrients, and are absorbed most rapidly. These sugars trigger insulin surges in the blood because of their high glycemic index:

- *Sucrose*: White, refined table sugar.
- *Confectioner’s Sugar*: Powdered sugar.
- *Brown Sugar*: Sucrose crystals from molasses syrup.
- *High Fructose Corn Syrup*: Highly refined sugar source.
- *Dextrose*: Made from cornstarch.
- *Invert sugar*: Glucose + fructose.

What’s more, these least healthy sugars are responsible for a number of scientifically proven adverse effects on health. There are more than 100 separate scientific studies demonstrating the adverse effects of sugar such as, immune system suppression... impaired mineral absorption... skin age acceleration through decreased elasticity... worsening cancer growth... and even weakening eyesight. Remember that foods like refined honey (typical grocery store honey), pancake syrup, candy, fruit juices, carbonated drinks, cakes, pies, donuts, cookies, and all other such sweets also contain refined flour that is quickly digested down to sugars! And both the sugar and the refined flour are rapidly dumped into the blood stream in an unnatural fashion.

These Sweeteners Are the “Next Best Thing”

These healthier sugars and sweeteners contain some nutrients, but still have a fairly high glycemic index. The healthier sugars are:

- *Agave nectar*—from a cactus-like plant in Mexico.
- *Fructose (levulose)*—found in many foods in combination with glucose and galactose such as: Honey, tree fruits, berries, melons, beets, sweet potatoes, parsnips, and onions. Fructose is a lower glycemic index (GI = 32) relative to sucrose (cane sugar). Please limit refined fructose consumption because it has been shown to damage cellular function through a process called glycation of many age-related chronic diseases.
- *Sugar Alcohols*—sorbitol, mannitol, and xylitol (wood sugar or birch sugar). Because it decreases infection from tooth-harming bacteria in the mouth, xylitol gums have actually been well proven to reduce dental cavities.
- *Rice Syrup*—from rice and sprouted grains. Maltose is the main sugar type here.
- *Turbinado*—raw sugar cane juice that has been dehydrated, colored, and crystallized. It should be considered a partially refined sugar.
- *Fruit Juice Concentrate*—remaining sugar from apples, devoid of most of its fiber, enzymes, vitamins, and minerals.
- *Date or Kiwi Sugar*—made from dehydrated ground dates or kiwis. However, the fruit itself is always a healthier sugar than the powder from the fruit.
- *Grade B Maple Syrup (unrefined)*—from maple tree sap. Still contains some vitamins and minerals.
- *Unsulphured Molasses*—made from the juice of sun-ripened cane; blackstrap molasses is the residue of the cane syrup after the sugar crystals have been separated. Both are nutritious, containing high levels of calcium, iron, and potassium.
- *Sucanat*—non-refined cane sugar that has not had the molasses removed from it. It contains nine minerals and six vitamins as it is only minimally processed.
- *Rapadura*—essentially pure dried sugarcane juice much like sucanat.
- *Raw Honey*—made by bees and typically only sold in health food stores—still contains minerals and vitamins.
- *Stevia*—a sweet herb powder or liquid.

For the Healthiest Sugars... Eat Whole Foods!

Better than all those sugars listed above are what I call the healthiest sugars. And these are found only in whole fruits and vegetables! Even dried fruits such as raisins and dates are great for sweetening food. These whole-food sugars also come with micronutrients known as fiber, enzymes, complete vitamins, organic minerals, antioxidants, and phytochemicals.

The take home message is this: Excessive refined sugar, visceral adipose tissue (VAT), and lack of exercise trigger special chemicals that cause destructive inflammation throughout the

body. This kind of chronic inflammation is at the root of chronic illnesses including cardiovascular disease, metabolic syndrome, hypertension, diabetes, and even cancer. And scientific literature and clinical experience both definitively show that diets high in fiber, fruits, vegetables, and herbal teas significantly reduce the occurrence of these and a host of other deadly diseases! To protect your health, start implementing a whole-foods diet in your life—TODAY!

A Special Note on Stevia

The sweet herb stevia is a Godsend to most of us who love sweet tasting foods. Why? When you taste it and then read the health benefits of this non-sugar natural sweetener you will be amazed! First let me clear up some controversy about stevia. It has been the subject of trade complaints and embargoes on importation and handled at times by the FDA as if it were an illegal drug. The result of the government intervention is that since the Dietary Supplement Health and Education Act (DSHEA) was passed in 1994, stevia can only be sold legally in the United States as a “dietary supplement” rather than a food. Fortunately, in December 2008 stevia was approved as a food additive and can be used as a natural sweetener. However there are still some countries in the world where stevia is still regarded as illegal or merely a dietary supplement.

Stevia is native to South America and has in some species up to 300 times the sweetness of sugar. The greatest thing is that stevia has beneficial effects on obesity⁷⁹ and it has even been proven to strengthen the immune system,⁸⁰ lower blood pressure,⁸¹ and slightly improve blood sugar control in diabetes.⁸² In fact, there aren't any side effects to stevia. There is just the great sweetening taste—without any calories!



The stevia plant was once restricted in sale but now is approved as a food additive in the U.S. instead of a supplement. (<http://en.wikipedia.org/wiki/Image:Stevia-rebaudiana-total.JPG>)

PART V

Lifestyle Interventions

Of course the main lifestyle habit is that of eating nutrient rich whole foods—with more than 50 percent of all meals from raw, uncooked food sources. The next category of lifestyle for health is to develop an exercise routine that you love to do consistently. And finally, there is dealing with stress effectively. I will touch on each of these areas now in detail.

What to Eat

Knowing what to eat is only a small part of the equation of health. But it is an important step that I will assist you to learn. Having the guidance and ongoing motivation to actually implement healthy foods (so that you love it) is the much bigger step. That is the job of the *90 Days to True Health™* program.

Let me share some great recipes with you here. Of course there are thousands of whole-foods recipes that I could choose from. But these are easy to do and very tasty. They provide only a start for you to experience how good you can feel after eating raw foods and nutrient rich whole foods.

Whole-Foods Recipes

Breakfasts and Desserts

Strawberry Smoothie

- Handful ice
- Handful fresh or frozen strawberries
- 1 stevia packet
- 1/2 cup water or more

Directions: *Blend in power blender and serve*



Photo courtesy of Cali Cutler

Chocolate Banana Smoothie

1 or 2 bananas
1 apple, pear, or kiwi
1/2 cup milk (consider soy, rice,
or almond milks)
1 cup crushed ice

1 tsp vanilla (optional)
1 handful almonds (optional)
Heaping Tbsp cocoa (note that
this has no sugar)
Water to balance thickness desired

Directions: *Blend in power blender and serve*

The Best of Granolas

6 cups rolled oats (can use any combination
of rolled grains)
1/2 to 1 cup wheat germ
1 cup unsweetened coconut
1 cup ribbon coconut
1/2 cup sesame seeds
1 tsp almond extract (optional)
2 Tbsp vanilla
1 cup or more of nuts (walnuts, cashews,
almonds, pecans)
1/2 cup sunflower seeds
1 cup flax oil

1 cup honey or Agave nectar (get at health
food store)

1 cup raisins (or other dried fruit)

Directions: *Mix grains, nuts, seeds, and
coconut together thoroughly. Pour oil and 1/2
cup honey/nectar over mixture and stir well.
Spread on lightly oiled cookie sheet and bake
at 300 degrees for 30 minutes or until golden
brown. Stir occasionally while baking. When
mixture is golden brown, take out and mix in
the raisins and any other dried fruit you wish.
Add vanilla and almond extract. Put back into
oven and bake for another 5 to 10 minutes.
Pour granola into large bowl and drizzle
about 1/2 cup additional honey/nectar over
the mixture. Stir well and allow to cool.*

Lunch and Dinner

“Can’t Believe I’m on a 500-Calorie Diet” Lasagna!

1 zucchini
Marinara Sauce (prepare first; next page)
Spinach leaves
3.5 oz of lean ground turkey (optional)

Directions: *Peel zucchini in flat, wide slices
like fat noodles. Cook turkey over the stove
with spices and 1/4 cup water. Layer ingredients:
Marinara sauce, zucchini noodles, marinara
again, spinach leaves, marinara, turkey, and
then over again, as desired. Add salt and
pepper to taste.*

Marinara Sauce

2 Tbsp olive oil
1 1/2 cups chopped onion
1 can (16 oz.) whole peeled Italian tomatoes
2 Tbsp tomato paste
Sea salt

Directions: *In a quart pan, heat oil on medium-high heat. Add onions and cook until softened. Stir in tomatoes, breaking them with the back of the spoon. Stir in tomato paste and a dash of sea salt. Bring to a boil, then reduce heat, and simmer 20 to 30 minutes.*

Zucchini “Pasta” with Chicken

1 to 2 zucchinis
Juice from 2 to 3 lemons
Sea salt
2 cloves garlic, peeled
A pinch of nutmeg
Boneless, skinless chicken breast (optional)

Chicken prep: *Preheat oven to 350 degrees. Arrange chicken in 13-by-9-inch baking dish. Drizzle with 1 Tbsp of lemon juice. Season with salt and pepper. Bake for 35 to 40 minutes or until chicken is cooked through. Slice into strips.*

Directions: *Peel and cut zucchini like spaghetti. In a high-speed blender, combine lemon juice, sea salt, garlic and nutmeg, and blend until smooth. Put the zucchini noodles in a serving bowl, and pour the sauce over the noodles,*

mix well. You may also use the Marinara Sauce (above). Mix into zucchini noodles, top with sliced chicken, and serve.

(Note: The texture of the zucchini noodles improves when they are left to sit in the open air at room temperature for six to eight hours.)



Photo courtesy of Cali Cutler

Turkey Wraps

Romaine lettuce (in long, wide strips)
White turkey (3.5 oz.)

Salsa (see next page)
Dash sea salt, pepper

Salsa

5 Roma tomatoes
1/4 cup fresh cilantro
Juice from 1 lemon
1/2 medium onion

Directions: *Dice tomato and onion, then add lemon juice and sprinkle of cilantro. Mix well. Spread salsa and turkey onto the lettuce strips. Add salt and pepper. These are great with a serving of fruit.*

Veggie Frittata

1 Tbsp olive oil
5 eggs, beaten
Leftover raw veggies (green or red pepper, onion, and mushrooms)
Leftover cooked veggies (corn, broccoli, and carrots)
Salt and pepper
1/4 cup parmesan cheese

Directions: *In a medium nonstick skillet, heat oil over medium heat. Add diced pepper, onion, or mushrooms and cook until tender. Stir in leftover corn, broccoli, or carrots. Pour in eggs, season with salt and pepper and stir mixture until it begins to thicken. Lower heat and cover for 3 to 5 minutes until mixture is firm. Uncover and sprinkle with cheese. Slide skillet under broiler to brown top of frittata. **Note:** If the skillets handle is plastic, cover it with a double layer of foil.*

Citrus Chicken Pitas

Marinade:

Juice of 2 oranges
Juice of 2 limes
Juice of 1 lemon
1 tsp fresh grated ginger
5 garlic cloves, minced
1 jalapeno, roasted, seeded, and finely chopped
1/2 cup chopped cilantro
2 Tbsp olive oil
4 boneless skinless chicken breasts cut into strip.

Directions: *Mix all marinade ingredients and marinate chicken strips over night if possible, or for an hour or two if overnight isn't possible. Heat a grill pan or nonstick skillet over high heat. Grill chicken strips in remainder of marinade.*

Dressing:

1/2 cup nonfat mayonnaise
Juice of 1 lime
Garlic powder

Mix together: *Fill pita bread with chicken and 1 Tbsp of dressing. Add in shredded green and red cabbage, sliced peppers (all colors), sliced red onion, and a sliced tomato. **Note:** You may sauté veggies in sesame oil until slightly tender if you prefer your veggies a little softer.*

Spinach Salmon Soup

(Amy Cutler's Recipe)

- 6 green onions
- Fresh spinach leaves
- 2 zucchini
- 2 herbal bouillon cubes
- 1 vegetable bouillon cube
- 6 cups water
- 2 frozen salmon filets

Fish seasoning

Brown rice

Feta cheese (herb garlic flavor)

Directions: *Defrost salmon filets and sprinkle with choice of seasoning. Sauté in skillet. Set aside. Combine water and bouillon cubes in pot and heat thoroughly until completely dissolved. Add vegetables, cook another 5 minutes. Add cooked seasoned salmon (from separate skillet), and serve over brown rice. Sprinkle with feta cheese.*

Soups and Salads

Creamed Black Bean Soup

(Amy Cutler's Recipe)

- 3 cans black beans
- 2 cups water
- 1 cup chopped green and red peppers
- 3 cloves garlic, chopped
- 1 1/2 tsp sea salt
- 1 Tbsp olive oil
- 1 cup almond milk

1 avocado, chopped

2 tomatoes, diced

Tortilla chips for garnish

Directions: *Drain and rinse beans from cans. Add them to pot. Add garlic, water, and peppers and cook until soft. Pour all in blender, blend until completely smooth. Pour back into pot, and then reheat with salt, olive oil, and almond milk. Serve garnished with avocado, tomato, and tortilla chips.*

Cream of Tomato Soup

- 2 ripe tomatoes, seeded and chopped
- 1/4 cup water
- 1 minced garlic clove
- 1/4 tsp onion powder
- 1/4 tsp salt
- 1/2 tsp dried basil
- Dash of salt/pepper/cayenne (optional)

Directions: *Blend all ingredients until mixture is smooth. Pour mixture in pot over the stove and*

warm. Be creative with your spices, to your taste. Serve as a main dish or a side dish with a small portion of fish, crab, shrimp, lean beef, chicken, or turkey.



Photo courtesy of Cali Cutler

Talapia Salad

Romaine lettuce/spinach/dark leafy greens
Tomatoes or cucumbers
Tilapia fish
A dash of pepper, salt, paprika
Italian dressing (optional; below)
1 lemon

Directions: *In a large salad bowl, mix lettuce (the darker the greens the better), and chopped vegetables. Pour Italian dressing over the salad mixture. Put a small pan on the stove on medium heat and add 1/8 cup water. After water is heated, let Tilapia cook through on both sides, occasionally adding spices. Add to the salad or eat as a side. May add any spices to Tilapia, according to taste.*



Photo courtesy of Cali Cutler

Vinegar with No Oil Dressing

Fill vinegar (1/3 cup) and water (1/8 cup) to their respective markings on the curette. Mix in the following herbs and spices and shake well:

1 tsp garlic salt

1 tsp onion powder
1 tsp Italian seasoning (herb)
1 tsp garlic and herb blend seasoning
1/2 tsp sea salt
Optional: 1/2 cup extra virgin olive oil

Strawberry Salad with Ginger Honey Dressing

5 cups bite-sized spinach pieces
2 cups sliced strawberries

1/3 cup toasted pecans, loosely chopped
1/3 cup Gouda or Edom cheese
Ginger-Honey Dressing (next page)

Ginger-Honey Dressing

2 Tbsp lime juice
2 Tbsp honey
1 Tbsp extra virgin olive oil

1/4 tsp ground ginger or 1/2 teaspoon
grated gingerroot

Directions: Shake all ingredients in tightly covered container. Pour over salad mixture.

Cucumber Dill Dressing

1 large cucumber
2 Tbsp fresh lemon juice
1 Tbsp dill seasoning
1 tsp minced garlic

2 Tbsp maple syrup (grade B is best)
1 tsp cold pressed flax seed oil
Chopped celery (optional)

Directions: Peel cucumber. Blend all ingredients until smooth. Add chopped celery to thicken. Pour over your favorite mixture of greens.

Healthy Almond Ranch Dressing

2 cups almond milk
3 Tbsp ranch dressing seasoning (dry)
3 Tbsp ultra gel

Directions: Blend ingredients together until smooth. Pour over your favorite mixture of greens, or use as sauce for chicken, pasta, or more.

Other Healthy Tips

Drink Lots of Water

Next, learn to drink (in ounces) half your body weight (in pounds) daily. So if you weigh 128 pounds then you should drink 64 ounces or two quarts daily. This can only be done consistently by placing your water bottle in front of you at home or work and measuring what you drink. Here's what I suggest if you get bored of drinking water all day: Add a fresh squeezed lime and a small packet of stevia to each near-full water bottle and you'll love this fresh limeade!

Fiber from Fruits and Veggies

Plan to eat nine fruit or vegetable servings daily. Fruits are best in the morning for cleansing, and vegetables best in the evening for building. There is really nothing equivalent to the real thing, though a green drink is the next best thing. There are a number of various green drink

types available in health food stores that are the powder form of various fruits and vegetables. You'll know them by their very "healthy" (and possibly pungent) smell. Give yourself about three weeks to adapt to the organic taste. Soon your cravings will shift to produce as your predominate food source.

Also, you might be amazed at the tasty, natural flavors you can create by adding healthy foods to make a killer salad! I love to put purple onions, boiled eggs, chopped almonds, carrot slices, raisins, chopped apples, goat cheese, pepper, or other non-salt seasoning, sunflower seeds, cucumber, peppers, and garlic on top of lots of fresh spinach and romaine lettuce. Only colorful veggies go into my salads. And the greener the better!

Eat smaller meals more often. Foods high in protein like fish, turkey and chicken, or meat substitutes should be eaten in a palm-size amount but more often. Six small meals per day is recommended. Eating plenty of fiber foods (like fruits and veggies) works the best in diabetes.

Playtime Activities (Exercise)

Though you learned about exercises when you were young and in your "prime," you're now ready to get re-motivated to doing them. Your goal must be to discover your perfect exercise (that is fun!), then develop a personal plan to implement this consistently.

If you can honestly admit that even the word "exercise" is a turn-off for you, then please keep reading. If you can't seem to find the time to exercise, then please keep reading.

Was there once a time in your life when you loved to exercise? Perhaps it was before you even understood what that word meant. Why has this word taken on such a meaning to cause discomfort even at just the sound of the word? Could it be from your experiences of it being hard, painful, unrewarding, and even frustrating? What expectations of yourself did you have at the time? Was exercise a privilege at the time, or was it something you felt you had to do out of obligation to a parent, coach, or spouse? Let me create a new paradigm for you about exercise—a short restructuring of your beliefs and feelings about exercise. Are you ready?

It is possible to restructure your belief about exercise so that when you say that word you suddenly feel... excitement and anticipation. That's right, just the thought of spending 30 to 60 minutes uninterrupted to nurture your body and mind through physical activity... like you might feel just prior to getting a massage or going into a hot tub... would revolutionize your motivation to get moving and engage in exercise. Prepare for this short meditation experience.

Find a quiet place with your journal and a pen... you are about to create something new in your paradigm of that word "exercise." Begin with a slow, deep cleansing breath in; then let it out with an audible sigh. Now continue slow focused breathing in which you maintain a feeling of peace.

With your eyes still open, visualize yourself as a small child, say, age four, five, or six... See that you are smiling... laughing... playing carefree with your best friends outside. Notice the beauty of the scene before you. Now allow yourself to feel and see what that small child (you) feels and sees for just a few moments. In other words, move your mental image from watching you to being you.

Maybe you can remember several scenes of you playing as a child—see the various locations you played, such as making forts out of the house furniture, playing out on the lawn, the field, at the creek, or the playground. Remember how you would stay out playing even when it got to be cold and dark outside? Why did you want to keep playing? Did you feel the excitement of being with friends and doing carefree things? Can you remember that you felt creative, free, and energized? See yourself stopping for just a moment to take in the beauty of those playtime feelings.

Notice you feel no fear, pain, or turmoil with play! Your creative mind is active... you feel very little exercise limitations, as if you could run without really getting tired... and whatever activity you did was the perfect thing at the time... remember?

Keeping those feelings within you (the child), now visualize yourself playing as a child again and see that you transition into your adult body in an instant, holding those same former freeing feelings and perspectives of playtime. With your eyes still open, see yourself at your current age walking alone or with a friend somewhere near your home. In fact, you don't even notice you are exercising because of the energy you are breathing in! And best of all, you are smiling! Your body loves it. You love it!

And you are creating this feeling—in anticipation for your next exercise session, which I will now refer to as your next “playtime activity.”

Consider what it would look like for you to free up 30 minutes of your time, four days per week, for playtime. You may even play for longer each of these four days. This will go a long way to eliminating stress too!

Stress Reduction

It is a well known fact that blood glucose increases whenever the body is experiencing a lot of stress, be it physical or emotional stress. When you are stressed, two hormones called adrenaline and cortisol are released by your adrenal gland. These hormones cause your body's glycogen stores to quickly be converted to glucose in order to “fight or run.” Therefore, you must learn to identify stress so you can overcome and eliminate it.

Another way to look at stress reduction is from the positive side of the equation. I call this living your passion or “following your bliss.” This means having the personal power to change what is not working in your life. This first means you must be able to discover how things in your life make you feel. Once you are in tune and can clearly identify your pervasive feelings regarding certain actions or conditions you have created for yourself, and if you are wishing for something different, then have the guts to take action to change it. Let go of your fears and follow your heart. Then your stress will disappear regarding this thing. With this pattern you learn to let go of being the victim in life—full of frustration and stress—to being the creator of your happiness.

What You Can Expect From *90 Days to True Health*[™]

The program I developed is called *90 Days to True Health*[™]. This program is the best overall approach to preventing and even reversing Type 2 Diabetes. Even if you don't have diabetes, this program will allow you to get off many prescription medications, optimize your health, and lose some serious weight (ten to 40 pounds average range) if needed, and keep it off. It is a three-month experiential training program that can only be obtained by going online to www.truehealth.com.

90 Days to True Health[™] is a permanent weight loss and health restoration program. This 12-week self-mastery course uses daily audio training, journal writing, manual instructions, and a personal coach to assist you throughout the program. The daily audio instruction guides you each day to help replace unhealthy eating habits with nutrient-rich whole foods. The supplements recommended push your body to achieve optimum digestive health and cleansing, and are only needed for two months. Your journal log helps identify your own core beliefs and the feelings holding you back from making changes.

And your personal coach (a close friend or family member) helps challenge and encourage you every step of the way! Once you have established new eating habits, the program then focuses on exercise, meditation, healing key relationships, and creating rewarding experiences in your life. It's nearly impossible NOT to experience true health with this program. Recipes are easy-to-make. Simple shopping lists support the weekly meal plans—and your daily audio instruction keeps you engaged in the process.

In the first 30 days, you'll learn the fundamental principles of whole-foods eating. You'll find out how to shop for and prepare nutrient-concentrated foods. You will also learn the principles of a liquid cleanse and how to properly return to eating solid foods. You'll begin to use several of the cleansing supplements recommended with this program. At this point, you'll begin to see pounds *melt* off of your body! After you've been on the *90 Days to True Health*[™] program for 30 days you can expect to feel better as your aches and pains start to disappear, see your health and enthusiasm for life transform, and you learn the amazing secret of how to eat less food yet not feel hungry.

During the next 30 days, you'll actually go on a seven- to ten-day liquid only cleanse. This cleanse is supported by additional supplements. It's aimed at restoring optimal function to your liver, digestive system, lymph system, skin, and blood. Following your liquid cleanse, you'll reintroduce whole foods in a step-by-step manner. You'll notice many food cravings disappear. And you'll even develop a taste for high fiber, nutrient concentrated foods. Even if you are a beginner, you'll learn to prepare and eat whole foods without feeling starved—and this is the key to *permanent* weight loss and health restoration!

After 60 days you'll experience a liquid cleansing and detoxification of your body toxins and a cleansing of your mind from toxic emotions. Therefore, your cells become more sensitive to insulin. You'll be able to curb your unhealthy food addictions. You'll be amazed as your blood pressure and blood sugar normalize. Most people permanently lost ten to 40 pounds and feel healthier, happier, and better than they have in years! They also reduce stress, anger, and depression which are putting an added strain on their heart and metabolism.

Then during the final 30 days, you will expand upon the core recipes of the program. You'll create a method of exercise that works best for you. You will be challenged to engage in relationships through service and teaching of your newfound skills. And you will learn an integrative medicinal approach to treating the most common illnesses. Finally, you will prepare for and set your clear goals for true health for the remainder of your life.

Actually, program participants continue to make huge improvements to their health and the weight continues to melt off even after the 90 days end because the new healthier lifestyle becomes habit and sticks with you for the rest of your life. There's no doubt about it: *90 Days to True Health™* works! The results are incredible and permanent.

PART VI

Nutrient Supplements to Lower Blood Sugar

Nutrient Supplements

Here are the nutrient supplements that have been shown to reduce blood sugars and adipocytokines. I recommend vitamins from whole-foods sources, not synthetic vitamins.

- Omega-3 fatty acids from fish, primrose oil, and even from flax seed oil—2 Tbsp daily.
- Digestive enzymes—one during each meal for at least four months.
- Chromium from brewer’s yeast—200 to 800 mcg/day.
- Flavonoids found in colorful fruits and veggies.
- Conjugated linoleic acid (CLA), which activates insulin receptor sensitivity much like omega-3 fatty acids in fish and cod liver oil.
- Alpha lipoic acid—300 to 600 mg/day.
- Biotin, Zinc, and Vanadium (10-50 mg/day). These usually are in a multivitamin.
- Coenzyme Q10 (ubiquinone). Some studies have shown that CoQ10 can stimulate insulin production and reduce fasting blood glucose and ketone body levels by 30 percent.
- Acetyl L-Carnitine is an amino acid that builds cellular energy metabolism via the transport of fat into the mitochondria to make energy.
- Vitamin B12 is helpful in the prevention and slowing the progression of diabetic retinopathy.
- Folic acid—800 to 1,000 mcg/day.
- Inositol—1,000 to 1,500 mg/day.
- Vitamin C—1,000 to 5,000 mg/day.
- Vitamin E with using all the tocopherols and tocotrienols—400 to 800 mg/day.
- Selenium works closely with glutathione peroxidase and vitamin E to prevent oxidative damage—200 to 400 mcg/day.

- Vitamin B6 can inhibit the glycosylation of proteins known to cause tissue damage from excessive blood glucose levels— 150 mg/day.
- Magnesium may alter both insulin secretion and the activity of insulin. It is thought that a deficiency of magnesium can interrupt insulin secretion and increase insulin resistance— 200 to 600 mg/day.
- Manganese can activate enzymes involved w/glucose metabolism and is an important cofactor in energy production and antioxidant enzymes— 10 to 50 mg/day.

Herbs

There are several herbal preparations that have been used to control blood sugar levels beginning as early as 1550 B.C. Approximately 400 different herbs have been used as effective medications to control diabetes. However, few of these herbs that lower blood sugar have been adequately studied to determine their actual effects and potencies.⁸³

Here are the more studied herbs to help regulate blood sugars in diabetes:

- **Gymnema Sylvestre (leaf)**—Several small placebo-controlled trials show that gymnema extracts lower blood sugar levels by enhancing the action of insulin. Animal studies indicate that gymnema can double the number of insulin-producing cells in the pancreas, and bring blood sugar levels to normal. Several human trials clearly show quite a significant improvement in blood sugar levels with gymnema.⁸⁴
- **Garcinia Cambogia**—Helps to reduce appetite and inhibit fat production without mental hyperactivity.
- **Fenugreek (Trigonella foenum-graecum)**—One large fenugreek study in participants with poorly controlled Type 2 Diabetes found a mean fasting blood sugar decrease from 151 mg/dl (baseline) to 112 mg/dl after 24 weeks.⁸⁵
- **Ginseng (Korean and American)**—One study showed a significant reduction in post-meal glucose versus placebo in Type 2 Diabetes.⁸⁶
- **Citrus Aurantium (orange bitters)**—Stimulates the sympathetic nervous system thus increasing metabolism and lowering appetite.
- **Milk Thistle (Silybum marianum)**—Is extremely good at cleansing the liver, an important organ especially in diabetes. One important study using milk thistle in diabetics with liver cirrhosis showed a significant blood sugar reduction over 12 months from 190 mg/dl at baseline to 165 mg/dl at 12 months. HbA1c levels dropped 7.9 percent at baseline to 7.2 percent at 12 months.
- **Green Tea**—Increases metabolism and reduces chronic disease. It significantly reduces food intake, body weight, cholesterol, and triglyceride levels. In one study green tea increased insulin activity by about 15-fold, an effect of the active ingredient, epigallocatechin gallate.⁸⁷
- **Bilberry (Vaccinium myrtillus)**—Leaves have a reported weak anti-diabetic activity and have been shown experimentally to lower blood sugar levels consistently by 26 percent in rats.⁸⁸
- **Cinnamon**—Increases sugar metabolism in rodent fat cells 20-fold according to

researchers at the University of California in Santa Barbara as reported in *Diabetes Care*. The same researchers also found that less than 1/2 tsp of cinnamon daily for 40 days significantly dropped blood sugar levels in 60 study participants with Type 2 Diabetes.

Summary

Diabetes mellitus is a chronic illness of blood sugar metabolism dysfunction. It is largely inherited, but genetic expression can nearly always be curtailed in Type 2 Diabetes through natural means and does not necessarily require prescription medications. There are risk factors and causes (factors that contribute directly to the illness) that must be considered. Once you clearly desire to live a life of true health, Type 2 Diabetes and Metabolic Syndrome can be reversed, much like other chronic disease states that develop over time. The *90 Days to True Health*[™] program plus nutrient supplements known to control blood sugar can, in most cases, reverse these diseases of blood sugar and insulin metabolism.

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