

Total Body ReSet For Type 2 Diabetes



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A Completement Formula Book

**TOTAL BODY RESET FOR
TYPE 2 DIABETES**

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INTRODUCTION

The purpose of this book is to provide evidence that type 2 diabetes is preventable and treatable with the proper diet, supplements, and support.

I'm not a diabetic specialist, I am a specialist in cellular health, and I know that by feeding your cells appropriate amounts of the right nutrients you can improve the structure and function of the whole body. I also know that you'll never medicate yourself out of diseases you've behaved yourself into. I'll reference authorities that say diabetes can be treated with a low-to-no sugar diet and give you the protocol to make the transition to such a diet as painless as possible.

THE DIABETIC EPIDEMIC

Here are the overwhelmingly sad statistics on type 2 diabetes. The number of people world-wide with diabetes rose from 108 million in 1980 to 422 million in 2014. By 2015, 30.3 million Americans, or 9.4% of the population, suffered from diabetes. Another 84.1 million had prediabetes, 70% of whom will develop type 2 diabetes within five years. By 2017, approximately 425 million adults ages 20-79 years were living with diabetes. Yes, that's more than the population of the U.S. By 2045, statisticians predict the number could rise to 629 million.

- Prevalence: 2015, 30.3 million (9.4%); 7.2M undiagnosed.
- Americans age 65 and older: 25.2%, or 12 million seniors.
- 1.5 million new cases every year.
- Prediabetes: 2015, 84.1 million Americans age 18 and older had prediabetes.
- Diabetes and prediabetes: 33-50% of the population.
- The 7th leading cause of death in the U.S. in 2015.

[Endocrine News](#) offers a world report on diabetes that differs from the above. They say that as of 2015, 11% of the U.S. population had diabetes. China and India show the highest total numbers of people with diabetes (110 million and 69 million respectively), but not the highest prevalence. China is 78th in the world with 10% prevalence and India is 76th with a prevalence of 9%. The 10 nations with the lowest estimated rates of diabetes globally are all in Africa.

The report said that, unsurprisingly, the U.S. had the highest prevalence with 11% of the population aged 20-79 years having diabetes among developed nations. The list of developed nations includes the U.S., the nations of the European Union, Canada, Australia, New Zealand, Singapore, South Korea, Israel, Andorra, Norway, Switzerland – a total of 37 nations. A crushing and embarrassing statistic is that the U.S., with almost 30 million diabetics, has around two-thirds the number of cases of all the other 37 nations in the developed nation league combined (46 million).

Why did the report claim that the high prevalence in the U.S. was unsurprising? Probably because the world knows we have pushed the envelope when it comes to creating heavily refined, heavily processed, and heavily sweetened DEAD food.

Let's look at that phrase and think how we are putting completely DEAD food into our incredibly ALIVE bodies. It is not a sustainable equation. So, think of that as you are deciding to reduce your sugar intake – make sure you replace it with food that is ALIVE. I don't mean however, that we should all go raw vegan. I mean meals that you make yourself from scratch—mainly a diet of animal protein and lots of salads and lightly cooked vegetables. You can follow the dietary guidelines offered in my books, [ReSet The Yeast Connection](#) and [ReSet Your Ideal Weight](#).

SUGAR EQUALS DIABETES

I wrote the following in my May 2019 blog, "[Sugar = Diabetes](#)," describing the escalation of diabetes:

In 1990 it was already known that when sugar became available in remote, sugar-free cultures, such as the Canadian Inuit or First Nations, the incidence of diabetes would skyrocket. Gary Taubes in his book *The Case Against Sugar* wrote the following history of sugar and diabetes:

In 1890, Robert Saundby, a former president of the Edinburgh Royal Medical Society, estimated that less than one in every fifty thousand died from the diabetes. William Osler, the legendary Canadian physician often described as the “father of modern medicine,” in his *Principles and Practice of Medicine* (1892) reported that, of the thirty-five thousand patients since the inception of Johns Hopkins Hospital, only ten had been diagnosed with diabetes.

By 2012, one in every 7-8 adults in this country had diabetes—12-14%. Another 30% are predicted to get diabetes at some point during their lives. Almost 2 million Americans were diagnosed with diabetes in 2012 – one case every 15-16 seconds. Among U.S. military veterans, one in every four patients admitted to VA hospitals suffers from diabetes.

In a Medscape article, “[Diabetes Has Lethal Consequences in Asia](#)”, researchers don’t ask what is causing a diabetic epidemic in Asia or what to do about it. They know there is no treatment for diabetes so they are just relegated to documenting the rising death count. Their big revelation is that Asian diabetics die earlier than those in the West.

The medical research trend is to document our medical misery but offer no cure – because allopathic medicine has no cure for chronic disease. They know they have no cure yet they refuse to admit that anyone else does and they routinely demonize any non-drug alternative.

I’ve been reeducating myself about diabetes this past year to finish writing [Sugar Without The Icing](#). I read over a dozen books, but I was most impressed by 2 books: Dr. Jason Fung’s *The Diabetes Code* and Dr. Richard Jacoby’s *Sugar Crush*. The unwavering, unapologetic message from both medical doctors is this: Sugar =

Diabetes and when you know that and come to terms with that, the treatment of diabetes is straightforward—Stop Eating Sugar!

This book could end right here but we humans seem to need facts and proof and a bit of handholding to come to grips with a sugar-free world. So, what follows are those facts, proof, and some handholding as I give you relevant information that I have gleaned.

THE SUGAR CONSPIRACY

Sugar has invaded every processed food, every meal, every treat; it almost ranks as its own food group. Why is that? I don't think the public is aware of how pervasive the sugar lobby is in North America. As I say in my book *Sugar Without The Icing*, I suffered at the hands of the sugar lobby because I exposed the dangers of sugar on a CBC TV program in Canada back in 1990.

Here is what we now know. In the 1970s, sugar went to the top of the food chain because of shameless promotion of high fructose corn syrup as being safe and natural. My blog, "[A Sugar-Free Half Century](#)," asks what would it be like if the sugar research 50 years ago proving sugar was causing heart disease was presented to doctors and the public. Certainly, sugar would be more widely regulated as a danger to health.

Instead, we were hoodwinked 50 years ago into accepting sugar as okay and rejecting fat as dangerous. I quote from a 2017 article that exposed "[How The Sugar Industry Tried To Hide The Health Effects Of Its Product 50 Years Ago](#)." It says, "About 50 years ago, the sugar industry stopped funding research that began to show something they wanted to hide: that eating lots of sugar is linked to heart disease. A new study exposes the sugar industry's decades-old effort to stifle that critical research."

This present study in the *Journal of the American Medical Association (JAMA)*

proves what was becoming apparent 50 years ago – that a high sugar diet increases your risk of heart disease. As soon as that inconvenient fact became known, all funding for that project was pulled and the results were never published. Even worse, all the blame for heart disease was placed on cholesterol and fats in the diet – both are finally now being exonerated.

The sugar industry has never admitted that sugar causes weight gain, instead they said it's due to lack of exercise. However, weight gain is caused by sugar, which leads to insulin resistance, metabolic syndrome, elevated lipids, and eventually heart disease. And, according to this *JAMA* study, sugar intake can harm the heart even without weight gain.

SIX TYPES OF DIABETES

Endocrinologists are complexifying the cause of diabetes and have, so far, identified a half dozen different forms. This is a huge distraction from the true underlying cause that all but type 1 diabetes are caused by excess sugar intake. Are they afraid that if they label sugar as the cause they will become lowly meal planners instead of well-paid drug pushers?

That does seem a bit harsh, but what else are we to think when a non-drug solution to obesity and diabetes seems within our reach?

For a brief overview of the 5 types of Diabetes beyond Type 2 Diabetes see [Appendix B](#).

COMPLEX ENDOCRINOLOGY

Even though the treatment of diabetes is very straightforward—**Stop Eating Sugar**—allopathic medicine has turned it into a very complex dance. They have drilled deeply into the hormones involved in sugar metabolism and uncovered all the nuances of endocrinology so much so that family doctors feel they have to refer their diabetic

patients to endocrinologists.

Endocrinology made diabetes all about the hormones and didn't really care that sugar was the cause. As a result, they mainly give drugs to diabetics, and when those fail, they give insulin injections.

Endocrinologists don't talk to their patients about diet – they refer to dieticians who think that sugar, bread, and fruit are necessary components of a balanced diet. Because they don't tell patients to just avoid sugars, they ensure that diabetics are treated with drugs and insulin to help manipulate a bad diet.

Here is a list of hormones studied by endocrinologists that give the impression that they understand diabetes. Several of them are so new that I've never heard of them and neither has the practitioner who did a technical edit of this manuscript.

- **Insulin:** High blood glucose levels stimulate the release of insulin, which opens up cells to receive glucose.
- **Glucagon** is released from the pancreas to help boost blood glucose when it falls too low due to stress or intense physical activity.
 - Converts liver glycogen stores into glucose to accomplish this task.
 - Activates gluconeogenesis, the conversion of amino acids into glucose.
 - Breaks down stored triglycerides into fatty acids for a source of energy.
- **Epinephrine, cortisol, and growth hormone** help maintain blood sugar levels. Along with glucagon, they are called "stress" hormones which means they elevate blood sugar.
- **GLP-1 (glucagon-like peptide-1), GIP (glucose-dependent insulinotropic polypeptide) and amylin** are hormones that regulate mealtime insulin.
- **Leptin** is a hormone that is directly connected to body fat and obesity. It's

released from the fat cells located in adipose tissues and sends signals to the hypothalamus in the brain. Leptin lets your brain know how much fat is in your body and regulates the rate of fat breakdown. Fat makes leptin levels rise and that diminishes your appetite so that you don't build up more fat.

- **Acylation stimulating protein (ASP)** is a hormone produced by adipocytes (fat cells) and is important for the storage of energy as fat. inhibiting action of hormone-sensitive lipase (the enzyme that breaks down fat). Because it can stop the breakdown of fat it is involved with the pathogenesis of obesity. It is elevated in type 2 diabetes and coronary artery disease.
- **Adiponectin** is a hormone secreted by adipose tissue and involved in regulating glucose levels as well as fatty acid breakdown.
- **Estrogen** is the primary female sex hormone responsible for the development and regulation of the female reproductive system and secondary sex characteristics. It helps to regulate metabolism and body weight. However, after menopause, women tend to gain belly fat, also called visceral fat.
- **Progesterone** supports thyroid function increasing body temperature and metabolism. When it is low, it encourages weight gain.
- **Androgen hormones** such as testosterone and DHEA build muscle and break down fat.

What does allopathic medicine do with this complex knowledge? Basically, they conduct enormous amounts of research that is often incredibly contradictory. The therapeutic focus is on giving hormones if they seem low and squashing them if they seem high. It's not a very enlightened approach and is mostly ineffective.

NUTRIENT BUILDING BLOCKS

When it comes to balancing thyroid, adrenal, sex hormones and insulin, I rely on the nutrient building blocks for cellular health. Because magnesium is necessary for the performance of 1,000 enzyme processes and responsible for 80% of known metabolic function, I consider it the first step in balancing blood sugar.

Magnesium

Magnesium is necessary to make and secrete insulin; it facilitates carbohydrate metabolism and allows insulin to transfer glucose into cells. Otherwise, glucose and insulin build up in the blood causing various types of tissue damage. Magnesium also balances the production of insulin so that inappropriately large amounts aren't released, which would cause the blood sugar to drop suddenly, resulting in symptoms of low blood sugar. Magnesium also helps heal the inflammation and damage caused by peripheral neuropathy. You can use *ReMag* orally and also locally as *ReMag* Lotion.

Chromium

Along with *ReMag*, I recommend *ReMyte*, which contains several minerals that have a role in glucose metabolism.

I learned about the glucose tolerance factor (GTF) in my naturopathic training. Researchers isolated a substance which, when bound to insulin, triples its activity, and called it GTF. Later, they realized that chromium was the active component of GTF, allowing it to enhance insulin activity and play a major role in the regulation of insulin action and its effects on carbohydrate, protein, and lipid metabolism. It is a latecomer to the nutrient scene, being recognized as an essential element rather recently, in 1959.

Diabetics need more chromium because they excrete two to four times more

with their tendency towards excess urination (which is caused by high blood sugar levels). However, chromium deficiency can also cause hypoglycemia (low blood sugar). Therefore, this mineral is not only important for balancing high blood sugar, it is also important for balancing low blood sugar. Chromium affects carbohydrate metabolism and is also involved in the metabolism of amino acids, fats, and nucleic acids (the building blocks of RNA and DNA).

Chromium enhances insulin activity, playing a major role in the regulation of insulin release and its effects on carbohydrate, protein, and lipid metabolism. The conversion of T4 to T3 is influenced by insulin, so in a roundabout way, chromium helps this conversion.

Manganese

Manganese deficiency causes problems with sugar and protein metabolism, increasing your risk of developing hypoglycemia and diabetes.

Selenium

The symptoms of selenium deficiency are quite generalized and include hypothyroidism, impaired immune function, and blood sugar imbalance.

Zinc

According to the NIH, zinc plays a role in the correct functioning of lipid and glucose metabolism, regulating and forming the expression of insulin. In numerous studies, zinc supplementation has been found to improve blood pressure, glucose, and LDL cholesterol serum level.

The B Complex Vitamins

Several of the B vitamins are important in sugar metabolism. *ReAlign* contains 4 methylated B vitamins and 4 food-based B vitamins. B-complex vitamins and magnesium are energy nutrients. As cofactors in over a thousand metabolic processes, they activate enzymes that control digestion, absorption, and the utilization of carbohydrates, proteins, and fats. A lack of these necessary energy nutrients causes improper utilization of food, leading to such far-ranging symptoms as hypoglycemia, anxiety, and obesity.

SYMPTOMS OF DIABETES

- Increased urination
- Thirst
- Dry mouth from dehydration due to the excessive urination
- Itching (not just from dryness but from yeast overgrowth)
- Blindness, kidney failure, heart failure, the development of Alzheimer's disease, fatty liver, and diabetic neuropathy.

Unfortunately, medications and insulin do nothing to slow down the progression of diabetic organ damage because they do not eliminate the toxic sugar load from our body. In fact, seven multinational, multi-center, randomized controlled trials of tight blood glucose control with medications failed to demonstrate reductions in heart disease, the major killer of diabetic patients. We pretend that using medications to lower blood sugar makes people healthier—but it's not true.

Remember: You can't use drugs to cure a dietary disease.

Conditions Associated with Diabetes

- Heart disease and stroke
- Low blood sugar
- Nerve damage (diabetic neuropathies)
- Diabetic kidney disease
- Diabetic foot problems
- Diabetic eye disease
- Gum disease and other dental problems
- Sexual and urologic problems

BLOOD SUGAR BASICS

Please read my book [*Sugar Without the Icing*](#); you can download it for free. In the meantime, here's an excerpt:

Eating sugary snacks or drinking a soda laced with 10 teaspoons of sugar is an incredible shock to the system. That's because the amount of sugar in the blood stream at any one time is only 2 teaspoons. So, 5 times the amount of sugar in the blood sets off body-wide alarms. The alarm stimulates an excessive pancreatic insulin response in order to normalize blood sugar levels by shoving that sugar into cells.

Too much insulin makes blood sugar plummet as it's driven into the cells. That incredible flood of sugar, several times a day, for many years is the underlying cause of our epidemic of insulin resistance and metabolic syndrome with the triad of obesity, diabetes, and heart disease.

In reaction to the drop in blood sugar, adrenaline and cortisol from the adrenal

glands are activated to raise blood sugar back to normal. A constant high intake of simple dietary sugars keeps this roller coaster going and eventually overworks or “burns out” normal pancreas and adrenal function, leading to insulin resistance. Conversely, high cortisol levels, produced by a myriad of stressors, will raise blood sugar levels.

As discussed previously, Insulin’s job is to open the channels in cell membranes to an influx of blood sugar. When there is too much insulin, which can be stimulated by only one can of sweetened soda pop with ten teaspoons of sugar, excess insulin molecules can lead to a traffic jam at the cell’s receptor sites. After years of high insulin bombardment, the cell receptors just shut down (insulin resistance). Therefore, sugar cannot get into the cells where it is needed to create energy and becomes elevated in the blood, resulting in damage to the eyes, kidneys, and heart from the development of adult onset diabetes. It’s this impending damage that the body is trying to avoid with insulin, but it becomes a losing battle.

THE DIABETES CODE

Dr. Jason Fung wrote *The Diabetes Code*. I met Dr. Fung in August 2018 in his Toronto office. I was interested in what he thought of magnesium as a treatment of kidney patients and for people on the Keto diet. It turns out he is a big fan and uses IV magnesium for his dialysis patients who all seem to be magnesium deficient. He’s also a fan of the Keto diet and intermittent fasting for weight loss and for diabetes.

Dr. Fung and I both know that one of the signs of diabetes is low magnesium—it’s in all the medical texts—but because we never learned about the importance of minerals in medical school, doctors do not routinely test for magnesium. If they do test, they use the wrong test. The serum magnesium test is highly inaccurate. A more accurate, but not perfect test, is the Magnesium RBC test that you can order without

a doctor's prescription online at [Request A Test](#). It's only \$49.00, but you want to have an optimum magnesium level of 6.0-6.5mg/dL. However, the best test is ionized magnesium, which is the focus of our first scientific study, which I will report on when the results are available. The ionized magnesium test is not yet available to the general public.

Dr. Fung's book *The Diabetes Code* is a real eye opener on the current research showing that caloric restriction for weight loss doesn't work and, in fact, has never worked. He explains insulin's role in ushering glucose into the cells, but with the excess of sugar and simple carbs that immediately turn into sugar, insulin overshoots the mark and tries to push all that sugar into the cells, causing the cells to shut, creating insulin resistance, as previously discussed. If you keep eating sugars and insulin keeps pumping out, the resulting side effects are an elevation of both.

Diabetologists all know that insulin causes weight gain. But it took a few doctors with common sense to theorize that if you severely restrict carbs, you lower insulin and lose weight because the body switches to fat-burning mode away from a continuous cycle of a high carb diet, elevated insulin, and transformation of a portion of those carbs into fat.

This section of bullets needs a header. Perhaps "Key takeaways from The Diabetes Code – April 2018"

- 50% of American adults are prediabetic or diabetic.
- Only diet and lifestyle changes will reverse it—NOT medications.
- The most important thing is to lose weight. But the diabetes medications don't do this.
- Insulin is notorious for causing weight gain.

Dr. Fung says in *The Diabetes Code*:

At its very core, type 2 diabetes can be understood as a disease caused by too much

insulin, which our bodies secrete when we eat too much sugar. Framing the problem this way is incredibly powerful because the solution becomes immediately obvious. We must lower our insulin levels by reducing our dietary intake of sugar and refined carbohydrates (a form of sugar).

SUGAR CRUSH

The full title of Dr. Jacoby's book is *Sugar Crush: How to Reduce Inflammation, Reverse Nerve Damage, and Reclaim Good Health*. I have yet to meet Dr. Richard Jacoby, but I would like to. With his background in surgical podiatry, Dr. Jacoby learned that diabetic peripheral neuropathy leading to foot ulcers and ending in gangrene and amputation is caused by sugar building up in cells and anatomically crushing nerves. Deadening the nerves of the feet leads to ulcers and abrasions that don't heal in an environment of poor circulation, leading to dire consequences. I'll cover cell damage and neuropathy below and let Dr. Jacoby describe the mechanism by which this occurs.

Diabetes is the result of too much sugar for insulin to contend with resulting in excess sugar building up in the cells or in the blood stream. I knew, even before I entered medical school that diabetes can damage all the organs, tissues, and cells in the body, but it hits the eyes, kidneys, extremities, and heart the hardest.

What is the mechanism of injury? In *Sugar Crush*, Dr. Jacoby details the actual pathophysiology, something that I did not learn in medical school. He discusses three mechanisms:

1. Polyol pathway shunting
2. Advanced Glycation End Products
3. Nitric oxide deficiency

The Polyol Pathway

When there is too much glucose in the blood stream that hasn't been shunted into the cells by insulin, the body must use other ways to remove glucose. One is called the polyol pathway, a two-step process that converts glucose to fructose. On the way to fructose, sorbitol is produced. That's very important because sorbitol is a large molecule, so once it's inside the cell, it's stuck there and can't get out. The retina of the eye, the microscopic capillaries and cells that make up the kidney glomeruli (that filter urine), and the nerves do not depend on insulin to allow glucose to enter cells—so they can be flooded with glucose at times of high blood sugar. This is an important fact because these are the areas that sustain the most damage in diabetes.

Any glucose not used to make energy in the Krebs cycle in the mitochondria will enter the polyol pathway. If the blood sugar is normal—around 100 milligrams/deciliter (5.5 millimoles/liter)—the polyol pathway is not activated. If the blood sugar is high, then sorbitol accumulates, stays in the cell, attracts water into the cell, and, if there is enough sorbitol, causes cellular swelling and cell death. Death by Sugar!

So, that's it in a nutshell—the microvascular damage to the retina, kidneys, and nerves is caused by high blood sugar that creates sorbitol.

It may be hard to imagine nerves swelling up with sorbitol, but nerves are made up of cells and these nerve cells are wide open to glucose, which then morphs into sorbitol. Sorbitol molecules are unable to move across cell membranes and get stuck inside the nerve cells. Water is pulled into the cells by sorbitol and the sorbitol swells and the nerves swell, causing nerve compression, numbness and tingling, and burning pain (AKA neuropathy). The circulation to sorbitol-swollen nerves is diminished; therefore, less oxygen and fewer nutrients perfuse the nerves until they gradually stop conducting sensory signals effectively and start causing pain.

Allopathic medicine will list several factors that can cause neuropathy, such as

chemotherapy, exposure to toxins, alcoholism, traumatic injuries, or a B vitamin deficiency, but the most common cause of neuropathy is high blood sugar.

Neuropathy is common in diabetic patients who have high sugar levels. But what about the high sugar intake of pre-pre-diabetic patients? That's what I call people who are ingesting more than two teaspoons of sugar per day!

When I searched for studies about "sugar and peripheral neuropathy," only 190 human studies in the past five years came up, and it seemed like the majority referenced diabetes. Nobody but Dr. Jacoby is looking into sugar-induced neuropathy.

Advanced Glycation End Products (AGEs)

AGEs are proteins or lipids that become glycated (bound to sugars) as a result of high levels of blood sugar. AGEs are a major factor in aging and in the development or progression of many degenerative diseases, such as diabetes, atherosclerosis, chronic kidney disease, and Alzheimer's. The most well-known AGE is HgA1C, a measurement of glucose building up in the body over a 3-month period that, when elevated, is a sign of diabetes.

When I learned about AGEs decades ago, the advice was to avoid cooking meat at high temperatures. Now, researchers realize it's mainly due to cooking fat and protein along with sugar, but instead of making sugar the bad guy, they picked on meat. Many processed foods are heated, and most of these foods have sugar; therefore, AGEs are common in processed foods.

I was asked if roasted vegetables, like sweet potatoes, form AGEs since they have a carbohydrate content that could be interpreted as moderately high in sugar. However it is animal-derived foods that are high in fat and protein that are generally rich in AGEs and prone to new AGE formation during cooking. We are assured that carbohydrate-rich foods such as vegetables, fruits, whole grains, and milk contain relatively few AGEs, even after cooking.

All tissues and systems of the body are at risk from the build-up of AGEs. These compounds can clog the tiny capillaries throughout the body, especially in the kidneys, eyes, heart, and nerves, the areas that are targeted in diabetes.

Here's how Dr. Jacoby analyses the nerve damage and scarring that occurs from sugar:

Too much sugar triggers inflammation in your blood vessels and causes the Maillard reaction, or glycation: the slow sugar-cooking of proteins in your body, causing the formation of AGEs. Among other things, this makes the endothelium rough and sticky, rather than smooth – it becomes more like Velcro than Teflon.

The resulting rougher inner lining of blood vessels—the endothelium—attracts cholesterol, which acts like a band aid on the area. It seems that cholesterol is simply trying to help out, but instead, it is accused of being the problem.

The Nitric Oxide Pathway

Nitric oxide is responsible for dilating blood vessels. I first learned about this function back in the late 90s when researching magnesium. Here's what I wrote in my book, *The Magnesium Miracle*:

Smooth muscle cells provide integrity and control the dilation of the arterial cavity, triggered by the calcium/magnesium ratio in the body. Calcium causes contraction and magnesium causes relaxation, which together control the blood pressure and flow in the artery. A final messenger for the dilation response is nitric oxide, which is dependent on magnesium. Animals on low-magnesium diets lose the elasticity of their arterial system. Coronary arteries require even more elasticity than other arteries because they must stretch and flex as the heart expands and contracts. Loss of elasticity results in inflammation of the

endothelial and subendothelial layers...

Nitric oxide production depends on the amino acid arginine. However, under the influence of sugar, high levels of a rogue arginine called asymmetric dimethylarginine (ADMA) that blocks production of nitric oxide. ADMA causes blood vessels to constrict, which reduces blood flow to the nerves. Reduced blood flow means that the tiny blood vessels bringing nutrients and oxygen to your nerves constrict and then clog up. A relatively minor amount of constriction can lead to a disproportionately large impact on flow.

Dr. Jacoby points out that according to Poiseuille's law, a 19% reduction in the radius of the vessel will reduce blood flow by 50%. Think of the implications: less than 20 percent constriction results in blood flow being cut in half. When nutrient- and oxygen-rich blood can't get to your nerves, they suffocate and black out, slowly and painfully.

Dr. Jacoby concludes that such mechanisms are at work in all your cells and account for such diverse problems as irritable bowel syndrome, migraines, and macular degeneration. He says that to see the complete picture of what happens when you eat sugar, it's important to remember that your nerves are essential messengers throughout your body. They fulfill roles that extend well beyond the sense of touch, carrying critical messages to and from every muscle and organ in the body. When those messages are impaired, muscles don't work properly and organs fail.

Since elevated ADMA levels are found in patients with high cholesterol, hypertension, arteriosclerosis, chronic renal failure, and chronic heart failure and are associated with restrictions in endothelial vasodilatation, magnesium deficiency is bound to be involved.

SUGAR-DAMAGED CELLS

Peripheral Neuropathy

How does this damage occur? From the title, *Sugar Crush: How to Reduce Inflammation, Reverse Nerve Damage, and Reclaim Good Health*, we surmise that sugar inflames, irritates, and damages the peripheral nerves. DANG! How did this get missed by allopathic medicine and even alternative medicine? Doctors say there is no cure for peripheral neuropathy and just prescribe toxic drugs like Neurontin (gabapentin) to try to give some relief.

Neuropathy is a result of damage to a nerve or system of nerves. Your nerves send out messages originating from your brain and spinal cord throughout the rest of your body. If they become damaged, that message does not make it to its destination. A damaged nerve can lead to weakness, numbness, tingling, burning, painful, and unpleasant sensations, usually in hands and feet. Nerve damage can also manifest as restless leg syndrome, carpal tunnel, plantar fasciitis, and migraine headaches.

Neuropathy affects up to half of patients with diabetes, so it's a huge problem in this population and suggests that too much sugar causes neuropathy. As a diabetic, your blood stream may be saturated with high levels of sugar all day, or you may give it jolts of sugar with your Sugar Pops in the morning, donuts at snack time, sodas throughout the day, and dessert at dinner. Whichever way you obtain your excess sugar, you are damaging your nerves. Ingesting any more than 2 teaspoons of sugar at a time is a burden on your body.

Diabetic Nephropathy

Diabetic nephropathy is a clinical syndrome of the kidneys characterized by the following:

- Persistent protein in the urine (>300 mg/24 hours) on at least 2 occasions, 3-6 months apart
- Progressive decline in the glomerular filtration rate (GFR)
- Elevated arterial blood pressure

Diabetes is the leading cause of kidney disease and 40% of diabetics develop kidney disease.

Dr. Jason Fung is a nephrologist, but he dove into the study of diabetes because most of his patients on dialysis had lost their kidney function due to diabetes and he decided something had to be done to reverse this horrific trend.

When you Google the question, "how are the kidneys damaged by diabetes" all you come up with is that "high blood sugar can damage the blood vessels in your kidneys. When the blood vessels are damaged, they don't work as well."

Let's apply to the kidneys what we learned from Dr. Jacoby about sugar damaging the peripheral nerves. Here's what actually happens: The glomerulus is a cluster of nerve endings and small blood vessels (in particular, a cluster of capillaries around the end of a kidney tubule) where waste products are filtered from the blood. When blood sugar levels are high in the glomerulus, the sugar can bind with protein molecules, causing glycated end products that damage the delicate tissues in the area and impede filtration.

The Glomerular filtration rate (GFR) is a blood test used to determine how well the kidney filtration system is working. The GFR determines kidney function and estimates how much blood passes through the glomeruli each minute. In adults, the normal GFR number is 90 or higher. Having a GFR between 60 and 89 may be normal for some people, including those over age 60. GFR tends to decline as we age even in people without kidney disease.

Stages of Kidney Disease

Stage 1:	Normal function – GFR of 90 or higher with 90-100% of kidney function
Stage 2:	Mild loss – 60-89 with 60-89% kidney function
Stage 3:	Mild to moderate loss – 45-59 with 45-59% kidney function
Stage 4:	Severe loss – 15-29 with 15-29% kidney function
Stage 5:	Kidney failure – less than 15 with less than 15% kidney function

Inexplicably, Stage 1 is normal kidney function. Shouldn't it be Stage Zero? What kind of manipulation is this to make us believe that, even though we may think we are normal, we are all going to have chronic kidney disease at some point our life!

If they went with Stage 0 for normal, they wouldn't have to break Stage 3 into "a" and "b!" Also, 60-89— defined as Stage 2—may very well be normal for some people, especially with aging. So, we have an aging population with a lowering GFR who are unnecessarily put on notice that they have chronic kidney disease, and it's only going to get worse. It's a shock and what I call "Medical PTSD," especially when they are told there is absolutely no treatment for any stage of kidney disease.

Yet doctors keep recommending that kidney blood tests be done annually to help diagnose kidney disease early, so it "can be treated." What do they mean by that since there are no specific kidney drugs? They want to give people with potential kidney disease medications to prevent the "complications" of this disease; they want you to take blood pressure medication and diabetes medication. On all the medical websites I researched, there was no mention of using magnesium to prevent and treat high blood pressure or diabetes. These sites make it clear, however, that kidney

disease is usually progressive, ending in kidney failure (End Stage Renal Disease) and heart failure. All the websites warn patients to avoid magnesium.

Remember, one of the known medical signs of diabetes is a low magnesium level. So, if you have kidney disease and you can't take magnesium, your blood sugar levels are going to keep getting higher as your magnesium gets lower. Then, you will be put on drugs for diabetes, which will cause more magnesium deficiency.

I've written widely about the need for magnesium in kidney disease. Here is what one young customer with kidney disease said: "Before I found you and *ReMag*, I was spilling 2500 of protein in my urine. 6 months ago, I was down to 495. I got my results in the mail today and it was way down to 100!!!!!! YAY!!!"

Here's what I wrote in *The Magnesium Miracle* about magnesium and kidney disease:

There was an attempt to evaluate the need for magnesium in kidney disease in 1993. Here is the story that opened my eyes to the importance of magnesium in kidney disease, a story told me by a well-known magnesium researcher, Dr. Burton Altura.

Many years ago, Dr. Altura asked a colleague, a kidney disease specialist, Dr. Markell, to test his kidney patients for magnesium levels. It was agreed that both Ionized Magnesium and Serum Magnesium would be tested and compared in dialysis patients.¹ The results were that people with chronic kidney disease (of all varieties) had simultaneously the highest levels of Serum Magnesium and the lowest levels of Ionized Magnesium. It appeared that their magnesium was stuck in the blood stream and not getting into their cells. It's not reported in the study, but when these patients took a liquid magnesium, their Ionized Magnesium levels improved, their Serum Magnesium levels became normal, their symptoms were alleviated, and their kidney function tests improved.

This anecdote explains for me why doctors fear magnesium. They just measure Serum Magnesium and see that the levels are elevated and assume the worst. However, they don't test for and therefore don't notice that Ionic Magnesium is low, showing that the cells remain starved for magnesium. There is not enough magnesium in an ionic form to get inside the cells to do its work. Unfortunately, the definitive test for magnesium—Ionized Magnesium—is a research tool and not available to the public.

Lest you think that diabetic nephropathy is the only form of kidney disease, kidney infections and kidney artery calcification are also implicated and will be aggravated by diabetes. I wrote a blog, "[Kidney Artery Calcification Causes Kidney Disease](#)," from which I will quote:

Kidney artery calcification is common in chronic kidney disease, but it's been neglected because it can't be treated with stents or artery bypass as is done in coronary artery and carotid artery calcification. Drug therapy is all that's left, but drugs are not used to treat kidney disease, drugs are given to prevent the diseases that are commonly associated with kidney disease: antihypertensives, blood thinners, and statins. Ignored is the fact that magnesium can dissolve calcification and potentially cure the problem, whereas statins and blood pressure drugs just make the calcification worse because they drain magnesium from the body.

To add insult to injury, anyone with any level of kidney disease is told to avoid magnesium! That's because patients with NO kidney function, who are on dialysis, can build up high levels of magnesium if they are given IV magnesium. Those cases led to detrimental advice that you should avoid magnesium if you have ANY level of kidney disease.

A *ReMag* customer who is on home dialysis says that her magnesium level plummets after each and every dialysis treatment because the treatment drains magnesium. If she doesn't take her *ReMag*, she develops heart palpitations and

leg cramps like most patients who are on dialysis. Yet doctors don't make the connection and just keep giving medications for what they say are complications of kidney disease. They are so convinced that kidney disease causes heart disease, they put patients on "preventive" heart meds and statin drugs when they should be giving magnesium!

Instead of expensive and disruptive IV chelation therapies, you can be in charge of dissolving your own calcification. A customer wrote the following:

My wife had open heart surgery 2½ years ago, due mostly to hypertension and obstruction of the coronary arteries. After being on [ReMag and ReMyte](#) for several months, her blood pressure dropped from 180/95 to 110/60. Also, her ejection fraction improved to 60%, and the last ultrasound of her carotid artery showed a 30% to 40% lessening of calcified occlusions.

Diabetic Eye Disease

Diabetic eye disease includes diabetic retinopathy, diabetic macular edema, cataract, and glaucoma. All these forms of diabetic eye disease have the potential to cause severe vision loss and blindness. Unfortunately, the condition is often at an advanced stage when symptoms become noticeable. Signs and symptoms of diabetic retinopathy may include: blurred vision, difficulty seeing colors, floaters, poor night vision, and even total loss of vision. It is for these reasons that diabetics should have their vision checked at least once annually to rule out these conditions.

There are no medications to prevent diabetic retinopathy. Only retinal surgeries can relieve symptoms but controlling diabetes and managing early symptoms are the most effective ways to prevent symptoms.

For many years, scientists claimed that they were unsure what was causing diabetic eye disease, or that their findings were incomplete. A 2018 publication in the *International Journal of Molecular Sciences* on "[Diabetic Retinopathy: Pathophysiology](#)

[and Treatment](#)” advanced the following theories:

Hyperglycemia is considered to play an important role in the pathogenesis of retinal microvascular damage. Multiple metabolic pathways have been implicated in hyperglycemia-induced vascular damage including the polyol pathway, advanced glycation end products (AGEs) accumulation, the protein kinase C (PKC) pathway and the hexosamine pathway.

Finally, I found a 2005 paper in the journal *Diabetes* by a Dr. M Brownlee, “[The Pathobiology Of Diabetic Complications: A Unifying Mechanism.](#)” It gave elegant details about these mechanisms, including reduced nitric oxide.

You recall that Dr. Jacoby discussed the polyol pathway, AGEs, and nitric oxide in his presentation of diabetic peripheral neuropathy. Essentially the same factors are involved with diabetic eye disease, including inflammation that can occur with any of these mechanisms. Again, the treatment is dietary restriction of sugar.

Diabetes and Heart Disease

Over time, high blood glucose from diabetes can damage your blood vessels and the nerves that control your heart and blood vessels. The longer you have diabetes, the higher the chances that you will develop heart disease. In adults with diabetes, the most common causes of death are heart disease and stroke.

The science behind sugar and heart disease was subverted 50 years ago, as I outlined in the section [Sugar Conspiracy](#), so my colleagues and I never learned in medical school or in any of our post-grad training of the association. Even though I became aware of the association early on when I first started writing my sugar book in the early 1990s, I never told people with symptoms of heart disease to Stop Sugar. Fortunately, because I was very focused on yeast overgrowth, I had most of my patients on a yeast-free diet which avoided sugar, gluten, and dairy. However, I’m going to be much more careful in the future to remind people that avoiding sugar

helps their heart as well as their kidneys, eyes, and nerves.

The mechanisms for damaging the small blood vessels appear to be the same for the heart as for the other organs, as shown in Brownlee's "[The Pathobiology Of Diabetic Complications: A Unifying Mechanism](#)." However, that research is lagging because the microvasculature of the heart has been studied more closely. Of course, I would say that the role of magnesium deficiency in heart disease trumps them all and has been completely ignored.

Nevertheless, high blood sugar levels play a role in heart disease and are finally being recognized.

MAGNESIUM THE WEIGHT LOSS CURE

I wrote the following lengthy article in May 2012 and it perfectly suits this book because it shows the importance of nutrients when you are trying to lose weight and balance your blood sugar to avoid or treat diabetes:

Magnesium: The Weight Loss Cure

I say a lot about weight and its association with magnesium in my book, *The Magnesium Miracle*.

1. Magnesium helps the body digest, absorb, and utilize proteins, fats, and carbohydrates.
2. Magnesium is necessary for insulin to open cell membranes for glucose.
3. Magnesium helps to prevent obesity genes from expressing themselves.

The Weight Connection

As I mentioned earlier, magnesium and the B-complex vitamins are energy nutrients. As cofactors in over a thousand metabolic processes, they activate enzymes that control digestion, absorption, and the utilization of carbohydrates, proteins, and fats. A lack of these necessary energy nutrients causes improper utilization of food, leading to such far-ranging symptoms as hypoglycemia, anxiety, and obesity.

Food craving and overeating can be simply a desire to continue eating past fullness because the body is, in fact, craving nutrients that are missing from processed food. You continue to eat empty calories that pack on the pounds but get no further ahead in your nutrient requirements.

Magnesium is also necessary in the chemical reaction that allows insulin to usher glucose into cells, where glucose is involved in making energy for the body. If there is not enough magnesium to do this job, both insulin and glucose become elevated. The excess glucose gets stored as fat and contributes to obesity. Having excess insulin puts you on the road toward diabetes.

When the glucose molecules line up in the mitochondria at the top of the Krebs cycle, magnesium is fully present. Six of the 8 steps of the Krebs cycle require magnesium – and if you don't have enough, the cycle slows down and produces less and less energy. Low energy and slow metabolism go hand in hand – magnesium deficiency causes weight gain.

The connection between stress and obesity cannot be overlooked. The stress chemical cortisol signals a metabolic shutdown that makes losing weight almost impossible. It's as if the body feels it is under an attack such that it must hoard all its resources, including fat stores, and won't let go of them under any inducement. Magnesium deficiency makes stress worse and contributes to excess cortisol. However, taking supplemental magnesium can support the adrenal glands and effectively neutralize the effects of stress.

Diabetes, More about Obesity than Genes

I've often said that 30 pounds of extra weight is almost a guarantee of future type 2 diabetes.

A Medscape article, "[Diabetes Risk Plummets by 75% When Multiple Risk Factors Tackled](#)," published in September 2019 in *Diabetology*, reported on the results of a meta-analysis that identified 14 studies including 1.2 million participants. Here is the opening paragraph describing this report.

Healthy behaviors — such as physical activity, eating a balanced diet, and reducing alcohol intake — are well-established as key to type 2 diabetes prevention, but a new meta-analysis shows just how dramatic the combined effect of adopting all of these behaviors can be, reducing the risk of developing the disease by as much as 75% and substantially reducing poor outcomes among those who have diabetes.

The following report in *Clinical Endocrinology News* is titled, "Obesity Ups Type 2 Diabetes Risk Far More Than Lifestyle, Genetics." It's a complex study that investigated the genetic origins of diabetes. However they found that an unhealthy lifestyle moderately increased the risk of developing diabetes by 18%, whereas being obese conferred a much larger (almost six-fold) increased risk of diabetes. The risk was a massive tenfold for people on a junk food diet. The researcher concluded that "the effect of obesity on type 2 diabetes risk is dominant over other risk factors." Of course, obesity is a lifestyle disease that can be helped with a no sugar, low carb, Ketogenic diet.

Obesity: More Than Bad Genes

Unfortunately, the public has been led to believe that obesity is inherited; if your parents were overweight, then you will too. This makes people think they don't have

a hand in creating this problem and can continue their bad habits and blame their genes.

Animal experiments show, however, that if a mouse with an obesity gene is deprived of B vitamins, the obesity will be expressed. But if it is fed plenty of B vitamins, it will remain thin in spite of its genes. The process of metabolizing B vitamins is called methylation, and magnesium is necessary for one of the most important steps in this process. That's why our *ReAlign* capsules are methylated and food-based to give the body the best building blocks for health.

Every metabolic function in the body requires vitamins and minerals—without them, symptoms develop. Therefore, the first step in treating nonspecific symptoms is diet and dietary supplements, not drugs. It is also important to note that many of the weight loss diets that people subject themselves to are often deficient in magnesium.

- Obesity, Metabolic Syndrome, and Diabetes are part of a continuum of illness that may progress to heart disease if not headed off by good diet, supplements (especially magnesium), exercise, and stress reduction.
- They are not really separate diseases, and underlying all this misery, we find magnesium deficiency.
- Diabetes is a new medical designation, a recognition that if someone is about thirty pounds overweight for more than a decade, diabetes will likely occur.
- People with Metabolic Syndrome are usually obese and on the road to diabetes with insulin resistance; they also usually have hypertension, elevated cholesterol, low HDL (good cholesterol) and high levels of triglycerides. The road has no set time frame and could take many years to complete.

Abdominal Obesity

Gaining weight around your middle is related to magnesium deficiency and an inability to properly utilize insulin. It also sets the stage for Metabolic Syndrome (insulin resistance). You only need a tape measure to diagnose a predisposition to Metabolic Syndrome—a waist size above 40 inches in men and above 35 in women puts you at risk. In their book *The Magnesium Factor*, authors Mildred Seelig, M.D., and Andrea Rosanoff, Ph.D., take note of research showing that over half the insulin in the bloodstream is directed at abdominal tissue. They theorize that as more and more insulin is produced to deal with a high-sugar diet, abdominal girth increases to process the extra insulin.

Metabolic Syndrome

The term Metabolic Syndrome describes a set of conditions that describes the consequences of long-standing nutritional deficiency, especially magnesium deficiency. The long list includes high cholesterol, hypertension, and obesity. It also encompasses elevated triglycerides and elevated uric acid. High triglycerides are usually found when cholesterol is elevated but most often when someone has a high-fructose diet, such as from drinking high fructose corn syrup sodas daily and eating lots of fruit. (many don't have high cholesterol; we found high TG with low HDL to be the best marker a ratio of >3:1)

High uric acid is due to the incomplete breakdown of protein from a lack of B vitamins and digestive enzymes. This complex collectively appears to be caused by disturbed insulin metabolism (initiated by magnesium deficiency) called insulin resistance and eventually can lead to diabetes, angina, and heart attack. We also know that a lack of magnesium sets the stage for a deficiency of pancreatic enzymes.

As previously noted, magnesium is required in the metabolic pathways that

allow insulin to usher glucose into cells, where glucose participates in making energy for the body. If magnesium is deficient, the doorway into the cells does not open to glucose, resulting in the following cascade of events:

1. Glucose levels become elevated.
2. Glucose is stored as fat and leads to obesity.
3. Elevated glucose leads to diabetes.
4. Obesity puts a strain on the heart.
5. Excess glucose becomes attached to certain proteins (glycated), leading to kidney damage, neuropathy, blindness, and other diabetic complications.
6. Insulin-resistant cells don't allow magnesium into the cells.
7. Further magnesium deficiency leads to hypertension.
8. Magnesium deficiency leads to cholesterol buildup, and both of these conditions are implicated in heart disease.

Syndrome X is another term for Metabolic Syndrome but it is less descriptive. It was coined by Dr. Gerald Reaven, Unquestionably, magnesium deficiency is a major factor in the origins of each of its signs and symptoms, from elevated triglycerides and obesity to disturbed insulin metabolism.^{2 3}

Insulin Resistance

- In Type 2 diabetes our bodies are completely filled with sugar and the sugar spills out into the blood.
- Insulin pushes glucose into the cells. When you have too much sugar in the cells you can't force anymore in and the cell becomes resistant to insulin.
- Elevated blood sugars = Dx DM2; you are given metformin, which diverts

the excess sugar to the liver, which then redirects it to the kidneys, the nerves, the eyes, and the heart.

- Much of this excess sugar will also just get turned into fat.
- Producing excess insulin to deal with carbs puts you on the road toward diabetes and tissue damage.
- Sugar levels keep rising and your doctor just doubles the dose of the medication, adds more meds, and finally adds insulin injections.
- Your blood sugar may look OK on paper, but your diabetes is getting worse along with drug side effects.
- This is why doctors say diabetes is a chronic, fatal disease with complications of heart attacks, congestive heart failure, strokes, kidney failure, amputations, and blindness—because they are treating symptoms, not the cause.

Insulin's job is to open up sites on cell membranes to allow the influx of glucose, a cell's source of fuel. Cells that no longer respond to the advances of insulin and refuse the entry of glucose are called insulin resistant. As a result, blood glucose levels rise and the body produces more and more insulin, to no avail. Glucose and insulin rampage throughout the body, causing tissue damage that results in the overuse and wasting of magnesium, an increased risk of heart disease, and adult onset diabetes.

One of the major reasons the cells don't respond to insulin is lack of magnesium.⁴ Some studies show that chronic insulin resistance in patients with type II diabetes is associated with a reduction of magnesium; magnesium is necessary to allow glucose to enter cells.⁵ Additional studies confirm that when insulin is released from the pancreas, magnesium in the cell normally responds and opens the cell to allow the entry of glucose, but in the case of magnesium deficiency combined with insulin resistance, the normal mechanisms just don't work.⁶ However, the higher the

levels of magnesium in the body, the greater the sensitivity of the cells to insulin and the possibility of reversing the problem.⁷

So, grab your weight loss cure today. Start taking *ReMag* Liquid, soak in Epsom salts baths, slather your body with *ReMag* Lotion, take *ReAlign*, and watch the weight drop off.

While you're doing that, don't be surprised if you lose lots of other symptoms of magnesium deficiency diminish or disappear. In "The multifaceted and widespread pathology of magnesium deficiency." The following extensive list was given: hypertension, cardiovascular disease, kidney and liver damage, migraine, multiple sclerosis, glaucoma, Alzheimer's disease, recurrent bacterial infection due to low levels of nitric oxide (NO) in the cavities (sinuses, vagina, middle ear, lungs, throat, etc.), fungal infections due to a depressed immune system, thiamine deactivation (low gastric acid, behavioral disorders, etc.), premenstrual syndrome, calcium imbalance (osteoporosis, hypertension, mood swings, etc.), tooth cavities, hearing loss, diabetes type II, cramps, muscle weakness, impotence (lack of NO), aggression (lack of NO), fibromas, potassium deficiency (arrhythmia, hypertension, some forms of cancer), iron accumulation, etc.⁸

THE DIABETES CURE

- Stop Eating Sugar
- Burn Off the Sugar and Fat Stores
- Natural, free, no drugs, no surgery, no cost

The treatment for peripheral neuropathy, nephropathy, diabetic eye disease, and diabetic heart disease is the same as the treatment of diabetes—avoid sugar. Since most type 2 diabetics are overweight, the treatment also includes weight loss, which is often accomplished by avoiding sugar.

As Dr. Fung says:

Remarkably, the practice of carbohydrate restriction for diabetes dates back more than a century, when the diet was considered standard treatment. According to a 1923 medical text by the “father of modern medicine,” Sir William Osler, the disease could be defined as one in which “the normal utilization of carbohydrate is impaired.” Yet soon thereafter, when pharmaceutical insulin became available, that advice changed, allowing a higher-carbohydrate intake to again become the norm.

I find it astonishing that diabetologists and diabetic organizations feel their treatment mandate is to use drugs to keep blood sugars within a certain range so that people can keep eating sugar!

According to Dr. Fung, a journalist, “Gary Taubes unearthed and developed...a comprehensive intellectual framework for the ‘carbohydrate-insulin’ hypothesis, in his seminal 2007 book *Good Calories, Bad Calories*. And the modern-day clinical model for diabetics was set forth by scientists Stephen D. Phinney and Jeff S. Volek, as well as the physician Richard K. Bernstein.”

Dr. Fung also reports on the first study using a very low carbohydrate diet in diabetics:

As of this writing, at least one trial, involving some 330 people, is underway for the treatment of the disease with a very low-carbohydrate diet. At the one-year mark, researchers found that some 97 percent of patients had reduced or halted their insulin use, and 58 percent no longer had a formal diagnosis of diabetes.

In other words, these patients successfully reversed their diabetes simply by restricting carbohydrates—findings that ought to be compared to the official standard of care for diabetics, which states with 100 percent certainty that the condition is “irreversible.”

The trial is now complete and accessible online: "[A Novel Intervention Including Individualized Nutritional Recommendations Reduces Hemoglobin A1c Level, Medication Use, and Weight in Type 2 Diabetes.](#)"

Here are the conclusions:

These initial results indicate that an individualized program delivered and supported remotely that incorporates nutritional ketosis can be highly effective in improving glycemic control and weight loss in adults with T2D while significantly decreasing medication use.

Diabetes is a disease that many people think is inevitable when your blood sugars begin to rise and that doctors treat with drugs, but it is actually curable with a low-sugar diet. It's quite criminal that this fact is not promoted widely.

The Ketogenic Diet

Dr. Jacoby recommends the Ketogenic diet, which is a great way to limit sugar and carbs. He even says, "sugar is the problem, fat is the answer."

Because sugar is the problem, he's also leery of too much fruit. My concern about fruit intake comes from long years of treating people for yeast overgrowth. I recommend that people with yeast overgrowth only eat 2 pieces of fruit a day and that everyone else eat no more than 4 pieces a day.

I describe the Ketogenic diet and intermittent fasting in my book, *ReSet Your Ideal Weight*. I also recommend my *Total Body ReSet for Diabetes protocol* to get the proper building block nutrients for your body. [Appendix A](#) has a detailed description of all my formulas. You can view my webinar [Diabetes is Reversible](#).

Doctors think DM is:

- Chronic
- Progressive
- Irreversible
- Fatal

Because they treat it with drugs and insulin and don't stop the sugar intake that's the true cause of the problem.

The prevention and treatment of type 2 diabetes rests on the diet; the purpose of adding my Completement Formulas to the *Total Body ReSet protocol* is to give you the nutrients that foods are supposed to provide. Our food supply is depleted of nutrients and that's why we eat so much—to try to find nutrients.

The Total Biology of Diabetes

The Total Biology view of diabetes is one of resistance and a need to fight. Therefore, you need more blood sugar to maintain the effort to resist. Where do you fight in your life? Where in your life do you disagree with something? Of course, there is much more to it than that, which can be pursued by consulting with Dr. David Holt at www.turnpointhealth.com.

Another view of diabetes that I've heard over the years is that we give ourselves high blood sugar to compensate for not having sweetness in our life. We replace the sweetness we are missing with sugar, which is the most pleasurable substance. The pleasure that we get from sugar has been used and abused by marketers for a century to make you addicted to sweet foods for purely commercial reasons.

You can foster the sweetness in your life by giving thanks for where you are and what you have and saying that you are ready for more. Remember, being angry or upset with someone else is like taking poison and expecting the other person to die! It's you who is being attacked by your own words and your own attitude. A

positive frame of mind, a smile on your face, and a lightness in your step when you face the world will go a long way to attracting the same back to you—and the opposite is also true.

A friend told me about a party she used to attend every month with her girlfriends. She called it a “Whine Party”, but I heard the word wine. She explained that they just sat around complaining about their lives. I thought it was the unhealthiest thing a person could do to their psyche.

What I’m recommending here has nothing to do with being a Pollyanna, although I have been accused of that; it has everything to do with living your life with Grace and Gratitude.

TAKE CONTROL OF YOUR HEALTH

I started this book by saying that you can’t take a pill for a disease you behave yourself into. If the first inkling that you have type 2 diabetes is from a routine blood test, that should be enough to propel you to make a major lifestyle change that will last a lifetime. This book describes the way to make that change.

This doesn’t have to be difficult because you will be following the *Total Body ReSet protocol* that will satisfy your body with the nutrients it requires. You won’t have cravings and you won’t overeat trying to obtain those nutrients.

Unfortunately, you can’t depend on your doctor to give you the proper encouragement that you need because doctors have no training in nutrition and there are no insurance payments for nutritional advice. But you can rely on this book, my radio shows, and support from our Customer Service if you have questions about my *Total Body ReSet protocol*. Just know that what I’m recommending is a lifestyle change worth making with a guarantee of success when you follow the protocol step-by-step.

Diagnosing Diabetes

When I was in practice, I saw my patients for their annual physical and blood work, during which I would test for blood sugar elevation. However, the annual physical seems to have gone by the wayside and people just go to doctors when they have a problem. This shift in patient care may mean that you are responsible for following your own blood sugar levels. It's probably just as well, because even if your doctor finds that you have elevated blood sugar, they don't have time to tell you what to do about it.

Here is how you make the diagnosis of diabetes and prediabetes yourself by knowing about fasting blood sugar and Hemoglobin A1C.

A fasting blood sugar level from 100 to 125 mg/dL (5.6 to 6.9 mmol/L) is considered prediabetes. If it's 126 mg/dL (7 mmol/L) or higher on two separate tests, you have diabetes.

Glucose can bind to hemoglobin; that compound is called hemoglobin A1c (Hb A1c) and can be measured in the blood. The test gives you the average level of blood sugar over the previous 2 to 3 months. The normal range for people without diabetes is between 4% and 5.6%. A level of 5.7% to 6.4% indicates prediabetes, and a level of 6.5% or more indicates diabetes. Within the 5.7% to 6.4% prediabetes range, the higher your A1C, the greater your risk is for developing type 2 diabetes.

If you want to be proactive about your blood sugar and your health insurance plan won't cover routine glucose blood testing, you can purchase lab testing online through RequestATest.com. After ordering, you will be offered a list of local blood labs where you can go and have your blood drawn and analyzed. The results will be sent to RequestATest and then sent to you.

TOTAL BODY RESET FOR DIABETES

Treatment Guidelines

1. Stop Sugar and White Flour Products. You can follow the dietary guidelines offered in my books, [*ReSet The Yeast Connection*](#) and [*ReSet Your Ideal Weight*](#).

- a. Eliminate all sugar and refined starches from your diet.
- b. Sugar has no nutritional value and can therefore be eliminated. Starches are simply long chains of sugars. Highly refined starches such as flour or white rice are quickly broken down into glucose.
- c. Too much dietary protein is also converted into glucose by the body.
- d. Follow a combination of the Yeast Free Diet and the Keto diet.

2. Burn Off Sugar and Fat with Fasting.

- a. When you eat, your body stores food energy. When you fast, your body burns food energy. If you simply increase your periods of overnight fasting, you can burn off the stored sugar.
- b. DM is merely excess glucose in the body; burning it off will reverse the disease.
- c. Fasting has been practiced for at least 2000 years. It is the oldest dietary therapy known.
- d. If you don't eat, your blood sugars come down.
- e. If you don't eat, you will lose weight.
- f. So, why aren't we implementing this solution?

3. Take the Completement Formulas in the Total Body ReSet Protocol.

ReMag, ReMyte, ReAline, ReStructure, RnA ReSet Drops.

- a. Magnesium deficiency is an independent predictor of diabetes.
 - i. Diabetics need more magnesium and they lose more than most

people through excess urination.

- ii. Magnesium is necessary for the production, function, and transport of insulin.
- iii. Magnesium is necessary to make and secrete insulin.
- iv. Magnesium facilitates carbohydrate metabolism.
- v. Magnesium allows insulin to transfer glucose into cells, keeping high levels of glucose out of the blood stream.
- vi. Tyrosine kinase, an enzyme that allows glucose entry into the cell is magnesium dependent.
- vii. Seven of the ten enzymes needed to metabolize glucose in the process called glycolysis are also magnesium dependent.
- viii. The energy-producing Krebs cycle requires magnesium in 6 of its 8 steps.
- ix. Low energy in diabetics may be due to magnesium deficiency.

4. Manage Yeast Overgrowth

Yeast overgrowth in the gut is caused by a high sugar diet, antibiotics, the birth control pill, and cortisone drugs. You can read about yeast overgrowth and my yeast detox protocol in [ReSet The Yeast Connection](#). I'll give you the protocol overview but please follow the dosage and details in the book.

YEAST RESET PROTOCOL

1. Yeast ReSet Diet

- a. Avoid sugar, gluten, and dairy. See *ReSet The Yeast Connection* Chapter 5 for food lists and Chapter 11 for recipes.
- b. Use *ReStructure* whey protein powder.
- c. Experiment with fermented foods.
- d. Eat anti-fungal foods: garlic, onion, lemon, lime, daikon, cayenne, turmeric, ginger.

2. Flora ReVive Soil-Based Probiotics

3. Yeast ReSet Detox Formula

- a. Bentonite clay
- b. Psyllium Seed Powder (**Note:** 1 tsp powder = 1 TBSP husks)
- c. Antifungals: Rotate garlic, grapefruit seed extract, oregano oil, caprylic acid, and daily *Pico Silver Solution*

4. Yeast ReSet Support Formulas

ReAline (Antioxidant/detox)

ReMag (Magnesium)

ReMyte (Multiple minerals)

RnA ReSet Drops (Making perfect cells)

ReStructure (Low carb meal replacement)

ReCalcia (Calcium since you will be eliminating dairy)

Note: I do have additional recommendations that encompass several other Completement Formula products that you can access in [Appendix A](#). They include *Pico Silver*, *Whole C ReSet*, *Flora ReVive*, *ReCalcia*, *ReNew Serum*, and *Blue Ice Royal*.

APPENDIX A:

TOTAL BODY RESET PROTOCOL

The *Total Body ReSet Protocol* was devised to give hope to people suffering from what I term “Total Body Meltdown.” The protocol provides an effective starting point to put you on the path to wellness, but it can also keep you healthy and prevent any sort of “meltdown.” The basic five components are *ReAline*, *ReStructure*, *ReMag*, *ReMyte*, and *RnA ReSet Drops*.

The following is a detailed, step-by-step guideline for implementing the protocol. Below these steps are Additional Recommendations, which you may or may not find necessary but are included for you to access on your journey to vibrant health.

My basic argument is that most chronic diseases are a combination of mineral deficiency (mostly magnesium) and yeast overgrowth, and my *TBR Protocol* supports the structure and function of the body to overcome these conditions.

You can read more about these formulas in the (over) one dozen free eBooks available for immediate download at DrCarolynDeanLive.

1. Water Intake Guidelines

While waiting for your *ReSet Formulas* to arrive, begin hydrating your body by increasing your water intake and adding sea salt, Celtic salt, or Himalayan salt (choose a salt that retains the color of the minerals)—not a pure white refined sea salt.

Water Intake Guidelines: Drink $\frac{1}{2}$ your body weight in pounds in ounces of water. If you weigh 150 lbs, you will drink 75 ounces per day.

Sea salt or Himalayan salt: Add $\frac{1}{4}$ tsp to every quart of drinking water – to one of those bottles, you will later add *ReMag* and *ReMyte*.

2. ReAline®

When the products arrive, begin taking these capsules to assist in detoxing/taking out the trash as you begin changing your diet and taking *ReMag* and *ReMyte*, which will also help to detox the body.

Dosage: 1 per day, with or without meals, for 1 week, then take 1 capsule twice per day.

Note: If you are already taking *ReMag*, don't worry, just continue to take it as you begin adding the other formulas.

Product Description: L-methionine and L-aurine are sulfur-based amino acids, that lend their sulfur molecules to the liver's sulfation detox pathways. The B vitamins in *ReAline* work synergistically with *ReMag*, methionine, and taurine. Four of the B vitamins are methylated and transfer a methyl group to the liver's methyl detox pathways. The rest of the B vitamins are food-based, which makes them easily absorbed and highly effective. They are essential to support our neurological health, the adrenal glands, sugar metabolism, and much more. Don't be concerned that these are not high dose B vitamins. Most B vitamins are synthetic and have to be high dose to force their way into vitamin receptor sites. Methylated and food-based B vitamins have no such issues. An in-depth discussion of *ReAline* and all its benefits can be found in my free eBook, [ReAline: Building Blocks to Detox](#).

3. ReStructure®

You can start to take [ReStructure](#) as soon as it arrives. It comes in a 22-serving pouch. We also carry convenient individual packets for the gym, for traveling, or to determine if you love the product enough to purchase the pouch. Simply shake one scoop or one packet of *ReStructure* into 8 ounces of the liquid of your choice and drink to your health. I swallow my *ReAline*, *Whole C ReSet*, and *Flora ReVive* capsules with my

ReStructure drink.

Product Description: *ReStructure* is a highly digestible energy boosting protein powder for athletes; it's also compatible with Paleo and Keto diets, as well as a meal replacement for losing weight and balancing blood sugar. Protein is the main ingredient, but carbs and fats are also part of the formula for the appropriate macronutrient balance. It's also the perfect meal if you are on a yeast elimination diet. Add raw eggs for more Paleo protein; blend in nuts or add heavy whipping cream to make it Keto. *ReStructure* contains a "secret ingredient": the concentrated, dehydrated *RnA ReSet Drops* that make *ReStructure* the most unique meal replacement you will ever find. Mix with water, coconut milk, or almond milk for a delicious, healthy beverage charged with the power of *RnA ReSet Drops*. More information can be found in my free eBook, [ReStructure: A Formula to ReSet Your Body](#).

4. RnA ReSet Drops®

You can add *RnA ReSet Drops* at any time in your protocol.

Dosage: 1 drop under the tongue, twice a day. Add 1-2 drops every week until you reach 15 drops twice a day, which is the average dose. Take *RnA ReSet Drops* 15 minutes away from food or drink.

Product Description: *RnA ReSet Drops* are the catalyst for several of the Completement Formulas, providing the impetus for RNA to make perfect copies of DNA for new cell development using the ionized minerals in *ReMag* and *ReMyte* as building blocks. Each batch of the *Drops* is tested through FDA certified 3rd party laboratories and reveals the quality and consistency of the product. We ensure that the batch is free of organisms, allergens, and heavy metals and reflects the beneficial nutritional assets of wonderful, biological sugars, amino acids, and phosphorus. *RnA ReSet Drops* are created from germinated barley and will occasionally test positive for

gluten and should be used transdermally for those who have been diagnosed with gluten intolerance.

You can be assured that the RnA Reset Drops Powder, which is featured in *ReStructure*, *Whole C ReSet*, and *Flora ReVive* is gluten-free.

The Radish Experiment below describes the power and potential of the *RnA ReSet Drops*:

The Radish Experiment

It's been difficult to explain the *RnA ReSet Drops*, so difficult that I haven't been able to write a book about them like I have for most of our other products. So, in order to satisfy our scientific curiosity, we funded the [Radish Experiment](#). You can click on the link to see our *RnA ReSet Drops* Webinar that shows the video of our experiment using Mighty Mash, the "waste" product of the *Drops*.

Let me explain the process of making the *RnA ReSet Drops* and how we obtain the Mighty Mash.

Our *RnA ReSet Drops* are squeezed out of a few hundred pounds of barley seeds that are germinated in huge rotating drums for several days. There's a lot more going on, but that's the basic process. The leftover barley sprouts when dried look and feel like straw. We call it "Mighty Mash," and we've been experimenting with as a living fertilizer.

The Radish Experiment consisted of digging the Mighty Mash into the soil and planting radish seeds. One plot used the Mash while the other had no additions. Both plots were watered daily. The Mash plot was also watered with Mash tea. This consists of Mash soaked in a drum of water that was sprayed onto the Mash plot twice a week.

On Day 25, both plots were harvested. The Mash plot produced 85 pounds of beautiful red radishes. The non-Mash plot only produced 3 pounds of radishes that passed inspection. The majority were wormy, small, and deformed!

Here's what I realized from this experiment: insects, worms, bacteria, and weeds are only programmed to "attack" weak, dying, or dead life forms. It's their prime directive—to take out the trash. Humans, animals, and plants are surrounded by similar invaders and only succumb when they are in a weakened state. RnA ReSet Mash infused the radishes with life and energy and made them incompatible with the organisms looking to cull out the weak plants.

I say the same happens with humans. We weaken ourselves with a poor diet, bad lifestyle, and negative emotions and then we are told we have an autoimmune disease. But it's not the body attacking a healthy self—it's the body attacking a weak and vulnerable self.

If we have the right building blocks from *ReMag*, *ReMyte*, and *ReAlign*, and an infusion of life force from *RnA ReSet Drops*, we are no longer victims to predators. To me, it's that simple, and that's why I created the Completement Formulas.

5. ReMag®

After 4 days of *ReAlign* and *ReStructure*, add *ReMag*, starting with ¼ tsp per day in a quart of water and sipping it throughout the day. By doing this you allow a slow infusion of *ReMag* into the cells, not an overload that may not enter into the cells and could be lost in the urine or in the bowels. Every 2 days, add another ¼ tsp. Work up to a saturation dose of 2-4 tsps. a day if you are trying to overcome a magnesium deficiency, if you are on medications, or if you are participating in athletic and/or work activities where you need to enhance muscle performance.

Note: If you are already taking *ReMag*, remind yourself of the dosage instructions and move on to #6 and begin adding *ReMyte*.

Product Description: Magnesium is required in 1,000 enzyme processes in the body and is responsible for 80% of known metabolic functions. *ReMag* is a unique non-

laxative, 60,000 ppm-concentrate of stabilized magnesium ions where 1 tsp equals 300mg of elemental magnesium. *ReMag* works synergistically with *ReMyte*. For more information, read the free eBook, [ReMag: Invisible Minerals Part I](#).

6. ReMyte®

After a week of slowly building up *ReMag*, add ¼ tsp of *ReMyte* into the same quart of water and sip it through the day. Every 2 days, add another ¼ tsp. Work up to 1½ tsp a day. However, if you are taking 4 tsp a day of *ReMag*, take 2 tsp a day of *ReMyte* to balance the minerals.

Product Description: Every enzyme reaction in the body requires a vitamin or a mineral as a participating cofactor. *ReMyte* is a multiple mineral made by the same process as *ReMag*, which stabilizes the minerals as ions. While all the minerals in *ReMyte* support hundreds of enzyme processes and are necessary for countless body processes, 9 of the 12 minerals specifically improve the structure and function of the thyroid and are required to make thyroid hormones. Instead of purchasing a dozen different bottles of minerals, you just need one bottle of *ReMyte*.

Note: When you take *ReMyte*, it can “wake up” your thyroid and improve your metabolism. However, be aware that if you are on thyroid medication, you may find yourself a bit hyperactive or a little bit warm because you no longer need as much thyroid medication as you are taking. Be sure to check with your doctor about reducing your medication. For more information, read my free eBook, [ReMyte & ReCalcia: Invisible Minerals Part II](#).

ADDITIONAL RECOMMENDATIONS

The following products are not in the *RnA ReSet Bundle*, but they will definitely help in supporting the structure and function of your body as it overcomes Total Body Meltdown.

7. Pico Silver™

Pico Silver supports the structure and function of the immune system against any type of infectious organism – bacteria, virus, or fungus.

Dosage: Varies from 1 tsp a day for maintenance up to 6 tsp a day for an acute infection.

Product Description: I decided to have *Pico Silver* made with the same stabilized ion technology as *ReMag*, *ReMyte*, and *ReCalcia* so that all of our minerals would be compatible. I was thrilled that the first time I used it for an “airplane cold,” 6 tsp throughout the day knocked it out overnight.

The silver ions that make up *Pico Silver* attach to WBCs to seek and destroy bacteria, viruses, and fungi and augment the myriad of other functions of WBCs. *Pico Silver* can detoxify the debris from dying organisms, thus curtailing the Herxheimer reaction as they fight infection. *Pico Silver* stimulates stem cell production, enhancing all types of tissue in the body and participating in tissue regeneration, including remarkable wound healing. *Pico Silver* does not build up in tissues and it balances the intestinal microbiome.

Read my booklet, [Pico Silver: Clearing up the Controversy](#), for a good overview and [The Silver Report](#) for a more in-depth report on the power of our silver ions.

8. Whole C ReSet™

This formula is an organic Vitamin C complex comprised of acerola, tart cherry, and whole fruit complex. Each capsule provides 250mg of vitamin C and 1,346 mg of Vita-C Fruit Blend.

Dosage: Take 1 capsule twice daily with or without food.

Product Description: Vitamin C is still the most popular vitamin in the world. However, most vitamin C supplements consist of one ingredient, ascorbic acid, which is printed plainly on the supplement label. *Whole C ReSet* is an organic vitamin C complex that contains natural ascorbates, all of which occur in food, but only 8 of which have been identified. There is a synergistic effect of the multiple ascorbates working together with a number of inseparable phytochemicals and co-factors such as polyphenols, including, anthocyanins, proanthocyanins, ellagic acid, chlorogenic acid, resveratrol, quinic acid, rutin, bioflavonoids including vitamin P, Factor K, Factor J, Factor P, ascorbinogen, and certain structural proteins, and various enzymes like tyrosinase. Thus, a vitamin C complex formula is much more effective than a simple ascorbic acid ingredient.

Vitamin C complex is essential to 8 enzyme processes in the body. It assists in the growth, maintenance, and repair of tissues, including skin, blood vessels, bones, and teeth. It is a powerful antioxidant necessary for wound healing and it helps eliminate bruising. High amounts of vitamin C complex are found in the adrenal glands and in the eyes.

In the book *Sugar Crush* by Dr. Jacoby, I learned how vitamin C complex specifically helps stabilize blood vessels and consequently prevent heart disease. Dr. Jacoby says:

Dr. John Ely developed the glucose-ascorbate antagonism theory. This theory stated that glucose and vitamin C compete against one another for the insulin they need to migrate into your cells and do their jobs. In that competition, glucose trumps vitamin C. This means that the more glucose circulating in the blood, the less vitamin C will enter the cells. When vitamin C is missing, your body will not convert L'arginine (an amino acid) to nitric oxide (a blood vessel vasodilator). Instead, it will convert to peroxynitrite, causing excessive constriction of the endothelium (in blood vessels) and reduction in blood flow (leading to hypertension).

9. Flora ReVive™

This product is our soil-based probiotic/prebiotic formula.

Dosage: 1 capsule twice a day, taken with or without food. The ingredients in *Flora ReVive* do not require refrigeration. If you have a sensitive gut, you may begin by taking one per day for one week before adding the second capsule.

Product Description: Each veggie cap of *Flora ReVive* contains:

1) *Saccharomyces Boulardii* – 5 billion CFU (colony forming units) per capsule. *S. Boulardii* is a type of yeast that helps keep *Candida albicans* and gut bacteria in balance. This is a hardy probiotic that survives stomach acid and does not require refrigeration.

2) Humic-Fulvic Acid (325mg) – derived from high-carbon humus found in ancient compacted plant material that is broken down by soil bacteria. This rich plant material contains probiotics, prebiotics, phytochemicals, enzymes, and minerals, and is the basis for all soil-based probiotics. Humic-Fulvic acid is high in oxygen and antagonistic to *Candida albicans* and biofilms.

3) Inulin (100mg) – a complex sugar from plant roots. This prebiotic stimulates the growth of beneficial bacteria, which helps improve digestion, immunity, and overall health.

10. ReCalcium®

ReCalcium is our calcium formula that you may want to add to your program if you are not obtaining sufficient calcium in your diet. I recommend 600 mg daily. See the calcium food list in my eBook, [ReMyte & ReCalcium: Invisible Minerals Part II](#).

Dosage: On the days you are not getting 600mg of calcium, you can take *ReCalcium* (1-2 tsp per day, the equivalent of 300-600mg per day). Also, pay attention to your

intake of *ReMag*. Magnesium intake should be 1:1 with calcium. However, if you are very magnesium deficient or if your body is trying to break down calcified soft tissues, you may require more magnesium and less calcium in the first several months of treatment. During this time your magnesium to calcium ratio may be 2:1 or even 3:1.

11a. ReNew Serum

ReNew Serum provides you with leading-edge skin enrichment. A labor-intensive process creates a 25X concentration of our *RnA ReSet Drops* formula. *ReNew* is superior to any serum presently on the market because it contains the unique and newly created iCell. Like the *RnA ReSet Drops*, it directs RNA to make perfect DNA copies in perfect cells.

ReNew benefits from having all of the previous generations of *Drops* blended together. We are now in our 150th generation of *RnA ReSet Drops*, which means no other formula will ever duplicate its properties. By using *ReNew* transdermally, you will absorb the benefits of the *RnA ReSet Drops* through the skin—especially if you have any concerns about taking *RnA ReSet Drops* orally.

11b. ReNew Face Cream

ReNew Face Cream is a unique cosmetic formula that is a synergistic blend of our healing *ReNew Serum*, our hydrating *ReMag Lotion*, and our antioxidant *Whole C ReSet*. It's a formula that I developed out of my personal desire to have a powerful face cream. I've been using *ReNew Serum* on my face for years but found it too heavy and flaky when it dries, so I've been mixing it with *ReMag Lotion*. When we developed *Whole C ReSet*, with its 8 vitamin C complex elements, I decided to include that as a potent antioxidant that goes far beyond the synthetic ascorbic acid that is in most high-end face creams.

ReNew Serum has the *RnA ReSet Drops* property of directing RNA to make flawless

copies of DNA and create perfect cells. View our *RnA ReSet Drops* Webinar, [Radish Experiment](#), for a glimpse at the life force that emanates from the iCells in the *Drops*.

ReMag Lotion is a superior hydrator that smooths and softens the skin. The skin is hydrated from inside-out as well as outside-in, therefore oral *ReMag* liquid and transdermal *ReMag Lotion* doubly support the structure and function of the skin – the biggest detox organ in the body. Eighty percent of known metabolic functions require magnesium; 1,000 enzyme systems utilize magnesium.

Before I began using *ReMag Lotion* as a body cream, I had keratosis pilaris—that’s a very fancy name for a common, harmless skin condition that causes dry rough patches and tiny bumps, mostly on the upper arms. I know that keratosis pilaris doesn’t affect the face, but the function of *ReMag Lotion* to clear this decades-old condition proved to me its value in healing the skin. *ReMag Lotion* can also clear, lighten, and brighten the skin, reducing redness, acne spots and blocked pores as it improves the function of skin cells. Magnesium helps balance hormones that can affect the skin, including lowering the stress hormone, cortisol.

Whole C ReSet, in addition to its antioxidant functions, regulates the synthesis of the structural protein collagen, which repairs damaged skin. How do we damage our skin? Let me count the ways: sun; chemicals in cosmetics; chemicals in our air, food, and water; lack of proper sleep; exercise; poor diet; and lack of proper hydration that includes sea salt.

ReNew Face Cream can be used on a daily basis to revive, restore, and brighten your precious skin.

11c. Mighty Mash

Mighty Mash (MM) is a soil amendment formula that supports the structure and function of soil bacteria and the life and vitality of the soil. MM will help to reclaim the soil that has been depleted for a century. MM is composed of dried barley sprouts that

are left over after we extract the *RnA ReSet Drops*. The Mash still contains the iCell and provides living nutrients to the soil. You can see the wonders of Mighty Mash by viewing our webinar called *RnA ReSet Drops*. At the 18-minute mark I describe the results of the [Radish Experiment](#), which used MM to produce amazing results. You can also read the description of the Radish Experiment in #4, the [RnA ReSet Drops](#).

12. Blue Ice Royal – Vitamin A, D3, K2

We do not make this product because Green Pasture has done such a great job of creating a food-based supplement that provides you with Vitamins A, D3, K2, and fish oil. It's food-based, made from fermented cod liver oil and butter oil. For additional Vitamin D, try to get 20-30 minutes of sun exposure per day. You can obtain Blue Ice Royal on our website, [RnA ReSet](#).

Dosage: One capsule twice per day.

Resources:

For free eBooks, visit [DrCarolynDeanLive](#). My live, 2-hour, call-in radio show is on Mondays at 4pm Pacific Time on [AchieveRadio](#). You can listen to archived shows on Achieve Radio or at [DrCarolynDeanLive](#).

For RnA ReSet Customer Support: Call 1-888-577-3703 or Email support@rnareset.com.

APPENDIX B

THE TYPES OF DIABETES

Type 1 Diabetes

This form of diabetes results from the destruction of pancreatic beta cells that produce insulin (the hormone that ushers glucose into cells). It usually occurs in children. It's still not clear to researchers what destroys the beta cells—a viral infection or an autoimmune attack

Type 1.5 Diabetes

This is a new designation that has been introduced since I was in medical school. It's an adult-onset of auto immune type 1 diabetes, which destroys beta cells; patients eventually require insulin.

Type 2 Diabetes

This is the most common form of diabetes, with 90-95% of all cases falling into this category. In type 2, insulin resistance is the cause of blood sugar rising in the blood stream. The pancreas still produces insulin, but the cells won't take up the glucose that it's introducing. Diet and obesity play a huge role in this form of diabetes.

Type 3 Diabetes

In research circles, it's no secret that being overweight and having type 2 diabetes can increase the risk of developing Alzheimer's disease—but now, they are linking it to a genetic abnormality affecting the brain.

Type 3 diabetes occurs when brain neurons are resistant to insulin—much like when body cells become resistant in type 2 diabetes. Insulin in the brain is essential for basic tasks like memory and learning.

Cashing in on that information, a clinical study has been mounted to test whether an insulin nasal spray can affect Alzheimer's symptoms.

Type 4 Diabetes

Type 4 is really just a subcategory of type 2 that occurs in the elderly and is not related to obesity. It likely has more to do with the pancreas slowing down its production of insulin as well as insulin resistance.

Gestational Diabetes

I report on gestational diabetes in my *Magnesium Miracle* book. This form of diabetes occurs during pregnancy in almost 10% of women. Doctors should warn pregnant women that they may have cravings during their pregnancy but that they should not indulge in sugar or junk food and shouldn't justify overindulging because they are "eating for two."

Glucose intolerance may have been present but undetected before pregnancy, but it usually develops due to the stresses of pregnancy. It usually only lasts from mid-pregnancy to delivery, but it's associated with later onset of full-blown type 2 diabetes. Doctors should alert these new mothers to this association and urge them to curb their sugar intake to avoid diabetes in the future.

Ionized Magnesium Blood Testing demonstrates the presence of magnesium depletion in pregnancy itself and to a greater extent in gestational diabetics. However, Ionized Magnesium Testing remains available only as a research tool; the next best option is a Magnesium RBC test, which is important in diagnosing magnesium deficiency in gestational diabetes.

Magnesium depletion, or relative calcium excess, may predispose women to vascular complications of pregnancy and needs to be addressed.⁹ Intervention with magnesium supplements can greatly improve the outcome for both mother

and baby. If the magnesium depletion continues throughout pregnancy, the woman can suffer preeclampsia or eclampsia (fluid retention, high blood pressure, seizures), which are finally and effectively treated with IV magnesium.

REFERENCES

- 1 Markell MS, Altura BT, et al. Deficiency of Serum Ionized Magnesium in patients receiving hemodialysis or peritoneal dialysis. *ASAIO J.* 1993 Jul-Sep;39(3):M801-4.
- 2 Singh RB, "Association of low plasma concentrations of antioxidant vitamins, magnesium and zinc with high body fat per cent in Indian men." *Magnes Res*, vol. 11, no. 1, pp. 3–10, 1998.
- 3 Ma J et al., "Associations of serum and dietary magnesium with cardiovascular disease, hypertension, diabetes, insulin, and carotid arterial wall thickness; the ARIC study, Artherosclerosis Risk in Communities Study." *J Clin Epidemiol*, vol. 48, pp. 927–940, 1995.
- 4 Humphries S et al., "Low dietary magnesium is associated with insulin resistance in a sample of young, non-diabetic Black Americans." *Am J Hypertens*, vol. 12, no. 8, pt. 1, pp. 747–756, 1999.
- 5 Alzaid AA et al., "Effects of insulin on plasma magnesium in non-insulin dependent diabetes mellitus: evidence for insulin resistance." *J Clin Endocrinol Metab*, vol. 80, no. 4, pp. 1376–1381, 1995.
- 6 Barbagallo M et al., "Altered cellular magnesium responsiveness to hyperglycemia in hypertensive subjects." *Hypertension*, vol. 38, no. 3, pt. 2, pp. 612–615, 2001.
- 7 Dominguez LJ et al., "Magnesium responsiveness to insulin and insulin-like growth factor I in erythrocytes from normotensive and hypertensive subjects." *J Clin Endocrinol Metab*, vol. 83, no. 12, pp. 4402–4407, 1998.
- 8 Johnson S. The multifaceted and widespread pathology of magnesium deficiency. *Med Hypothesis*. 2001 Feb;56(2):163-70.
- 9 Bardicef M et al., "Extracellular and intracellular magnesium depletion in pregnancy and gestational diabetes." *Am J Obstet Gynecol*, vol. 172, no. 3, pp. 1009–1013, 1995.

THE DOCTOR OF THE FUTURE



Dr. Carolyn Dean is a medical doctor and naturopath. She's the author of over [35 books](#) including best seller [The Magnesium Miracle](#) (2017) along with *IBS for Dummies*, *Hormone Balance*, *Death by Modern Medicine*, and over 110 Kindle books. In 2011, she launched [RnA ReSet](#) and brought her 50 years of experience into her proprietary, unique formulations that give every individual at any stage of wellness or illness the necessary building blocks for sustained health, vitality and well-being. Dr. Dean's blog is at [Dr.CarolynDean](#). Free eBooks and her radio show archives are at [Dr.CarolynDeanLive](#).

Disclosure

Dr. Dean has a creative and economic interests in the innovative products of RnA ReSet, including, but not limited to: *RnA ReSet Drops*, *ReMag*, *ReMyte*, *ReAline*, *ReCalcia*, *ReNew Serum*, *ReNew Face Cream*, *ReStructure*, *Pico Silver*, *Flora ReVive*, *Whole C ReSet*, and our agricultural product, *Mighty Mash*. For more information regarding all the Completement Formulas, go to the product website [RnA ReSet](#). If you have questions, email Customer Service at support@rnareset.com. If you wish to place an order by phone, call 1-888-577-3703.