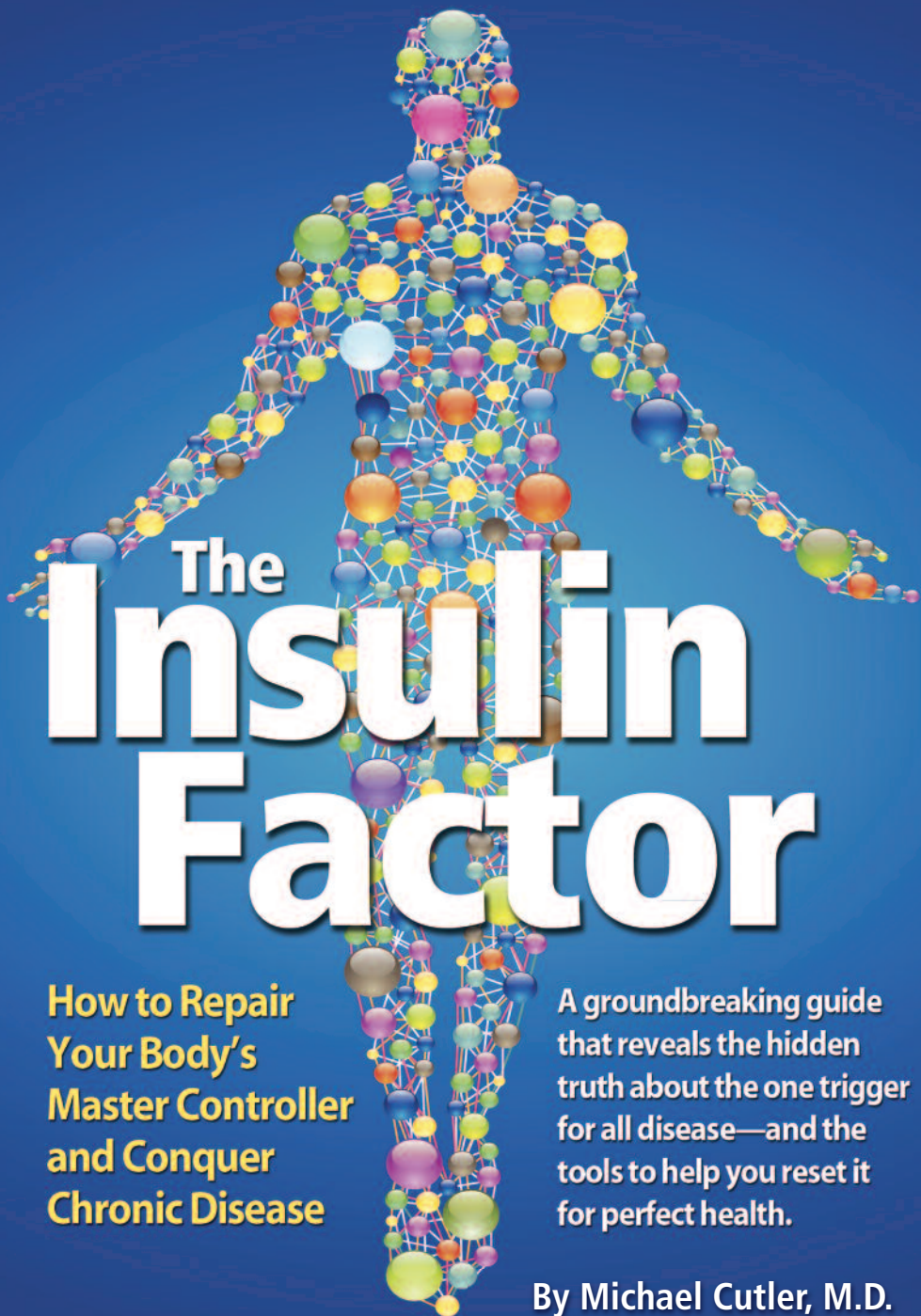


A MEDICAL TREASURY



The Insulin Factor

**How to Repair
Your Body's
Master Controller
and Conquer
Chronic Disease**

A groundbreaking guide that reveals the hidden truth about the one trigger for all disease—and the tools to help you reset it for perfect health.

By Michael Cutler, M.D.

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CHAPTER 1

Tap into the Power of this Misunderstood Health Mediator to Reward Yourself with the Kind of Active and Enjoyable Life You Deserve

The news from his doctors was something no one ever wants to hear.

Diagnosed with terminal lung cancer, Stamatis was given only nine months to live.

He could have stayed in the U.S. and gone through rigorous and expensive chemotherapy treatments. But instead... he decided to return with his wife to the place where he grew up... to spend his last few months at peace and to be laid to rest in the cemetery with his ancestors.¹

After returning to his native Ikaria, a small Greek island in the Aegean Sea, he was immediately confined to bed under the watchful eyes of his mother and wife. No one expected anything other than for Stamatis to pass serenely away and float off into the warm Aegean breeze.

But this did not happen.

After those first few weeks in bed, Stamatis began to slowly recuperate. Strangely enough, he started feeling better.

Eventually, he got out of bed and planted some vegetables in the garden... he started taking long walks around the village where he grew up... he spent time visiting childhood friends... he rediscovered his faith. “Every night I would walk to the

tavern to meet my friends, drink wine and play backgammon until midnight and wonder why I was still alive,” he said.

Nine months slipped by and he felt good. After 11 months, he felt even better.

Forty-five years after he was diagnosed with terminal cancer, Stamatis was still alive and actively tending to his olive trees on Ikaria. On January 1, 2013, he celebrated his 98th birthday. A few years prior to his birthday, he’d traveled back to the U.S. to try and find his doctors... he couldn’t find any of them as they had already passed away.

The underlying forces at work behind Stamatis’ amazing recovery may seem like a miracle... but if you want to flush disease out of your body, avoid chronic illnesses, live a robust, active life and take absolute control of your health like Stamatis, what I uncovered clearly shows there’s more to this than meets the eye.

Ignore Mainstream Medicine’s Blunder if You Want a Carefree and Active Life Without Disease

The underlying problem is conventional medicine is missing the boat on all this.

When it comes to chronic diseases and conditions, the norm is to treat each one separately with often unnecessary surgeries and toxic drugs. Does this work?

I can tell you that you might “crawl” along and survive longer than if you did nothing. But when it comes down to your quality of life, all bets are off.

See, chronic conditions like heart disease, cancer, diabetes, Alzheimer’s, obesity... they are only symptoms of a greater condition... a condition that once balanced will naturally prevent and cure the majority of these diseases. It’s what happened within a short period of time to Stamatis when he returned home to his Greek Island... and he probably didn’t even know why.

Mainstream medicine does not want you to know about this because there are big bucks to be made treating folks the traditional way.

Well, I'm ready to put a stop to all this madness and let you in on the real, hidden truth behind preventing and curing disease.

Stunning Secret Behind Stopping Chronic Disease Dead in its Tracks

My name is Dr. Michael Cutler. In helping many patients over the years in my family practice, I've come to realize the importance behind managing this one amazing health mediator within your body.

Mainstream medicine continues to undervalue this mediator and pigeon hole it into a single disease... you'll soon know why this approach is not in your best interest.

If you want to give your health a huge boost, prevent chronic disease from taking over your body and even cure a chronic condition you already have, allow me to show you how to take advantage of this stunning revelation.

And please don't just take my word for it... coming up in this chapter, you'll learn about a colleague and metabolic expert who has researched and lectured on this very thing many times before... and who agrees with what I've been helping patients do for years.

But first, I believe it's necessary to be the bearer of some disturbing news to better open our eyes in grasping the scope of the problem. According to the Centers for Disease Control and Prevention (CDC) and other sources, not only are chronic diseases the leading cause of death and disability in America, they're also on the rise.^{2,3}

Here are just some of the recent facts from the CDC on chronic diseases and conditions:⁴

- As of 2012, about 50 percent of all adults (117 million people) have one or more chronic health conditions.

- 25 percent of all adults have two or more chronic health conditions (2012).
- Seven of the top 10 causes of death in 2010 were chronic diseases. Two of these (heart disease and cancer), accounted for nearly 48 percent of all deaths.
- In 2013, the American Medical Association (AMA), amid a bit of controversy, classified obesity as a disease.⁵ From 2009-2010, more than 30 percent of adults (about 78 million people), were considered obese with a body mass index (BMI) ≥ 30 kg/m². And obesity is on the rise with 20 percent of youths aged 2-19 considered obese.
- Diabetes is the leading cause of kidney failure, lower limb amputations and new cases of blindness among adults.

When most everyone wants to live a healthy and bountiful life, why would I bring up all these troubling issues on chronic diseases and conditions? Well, the bottom line here is many, if not most, of these conditions are preventable and manageable through early detection and smart, well-informed lifestyle changes.

And if you follow my advice on how to balance out your body's master hormone – insulin – which mainstream medicine has completely undervalued, you'll be on your way toward a life without these chronic conditions.

Next up, let me show you how conventional medicine takes the narrowest view on insulin and puts your overall health at risk...

You Can Prevent Almost Every Chronic Disease We Know of Without Using Dangerous Drugs

At the heart of this madness is how the medical world totally underestimates the value of insulin.

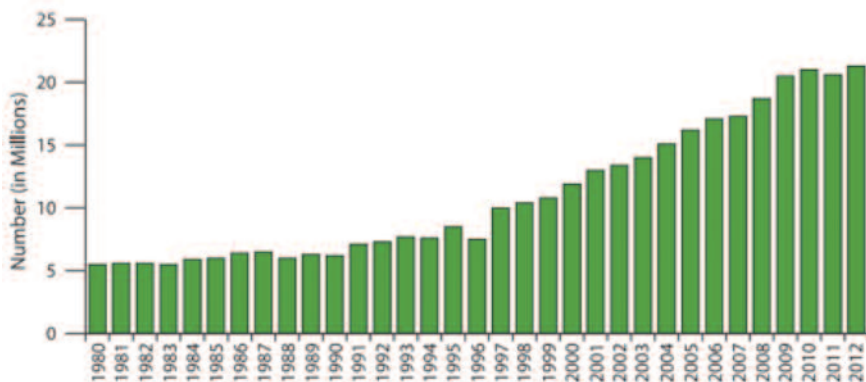
To me, this is the biggest medical mistake EVER.

Insulin has been pigeonholed into a single disease – diabetes. It's much more important than that.

Now, don't get me wrong... diabetes is a serious disease and here are just some of the facts behind the epidemic...

- In the U.S. alone, close to 80 million people or about 25 percent of the population have some form of diabetes or pre-diabetes. Shockingly, both type 1 and type 2 diabetes among children and teens has skyrocketed.⁶
- According to the CDC and 2013 statistics, diabetes ranks as the 7th leading cause of death in U.S.⁷
- From 2009 to 2013 based on CDC data, the number of Americans killed by diabetes per 100,000 population has jumped from 22.4 to 23.9.⁸
- From 1995 to 2007, the direct cost of diabetes has risen from \$91 billion to \$116 billion.⁹
- This is not just a U.S. issue: In the United Kingdom (UK), more than one-third of British adults are pre-diabetic. From 2003 to 2011, the number of pre-diabetics has more than tripled.¹⁰

Figure 1. Number of US Adults Aged 18 or Older with Diagnosed Diabetes, 1980-2012



Data from the CDC's "Diabetes 2014 Report Card" shows the dramatic rise in the number of diagnosed cases of diabetes over the years. But this is only part of the picture due to the number of undiagnosed and pre-diabetes cases that often go unreported. And diabetes is only the tip of the iceberg when it comes to the total number of people with chronic disease due to dysfunctional insulin.

Now that you know or are reminded how serious and expensive diabetes is, it's important for you to realize that diabetes is only one of the possible symptoms behind a dysfunctional master hormone.

Diabetes is only the tip of the iceberg here and mainstream medicine chooses to treat the symptoms with drugs. Instead, if the focus was on fixing your master hormone (like how I help my patients), not only would diabetes be prevented and cured, almost all other chronic disease would be wiped out!

I'll provide you with more scientific evidence of this coming up and show you ways to naturally tame your insulin. But first, I think it is important to better understand more of what's behind poor insulin function and how it leads to overall poor health.

Take Control to Slash Your Risk of Heart Disease, Stroke, Blindness, Nerve Pain, Kidney Disease, Skin Disorders and More...

As you may already know, diabetes is a condition of dysfunctional blood sugar metabolism. Every cell of your body needs sugar to function and stay alive. Muscle cells, for example, use basic glucose sugar molecules to generate the energy behind muscle contraction.¹¹

For glucose molecules to be able to enter your cells where they can be utilized as a fuel source, they require a special mediator ordering this to happen. But when sugar cannot get readily into your cells, it stays in the blood stream in high amounts.

This sugar can swiftly attach to the cells of sensitive organs such as your eyes, heart muscle, nerves and even kidney tissues. This "glycation" effect impairs the functioning of cell metabolism so that over time excess sugar damages your heart, blood vessels, nerves, kidneys and skin. Not a good thing for you at all.

What happens when this process continues to go awry?¹²

- In the case of type 1 diabetes (juvenile or insulin dependent diabetes), the pancreas does not make sufficient quantities of the special mediator. Fixing the special mediator will go a long way toward boosting your health but won't cure type 1 diabetes. Specialized medical attention is needed to supply your body with insulin on a regular basis.
- With the much more commonly found type 2 diabetes, the special mediator levels in the blood reach higher than normal levels.
- Consequently with type 2 diabetes, sugar is not effectively moved through your cell membranes and into your cells. This condition has a specific name called "insulin resistance."

If insulin resistance is left unchecked, it can lead to increased levels of insulin and further non-responsiveness by your cells.

It's important to remember that with diabetes the dysfunction starts at your cell level. 50-75 trillion cells make up the organs and tissues of your body. When sugar cannot effectively enter cells to be utilized, the sugar...¹³

- Remains too high in your blood.
- Begins to damage certain organs in your body (due to the excess sugar).
- Attaches to the cells of organs such as your heart, blood vessels, nerves, kidneys and skin.

The bottom line with diabetes is that your master hormone is out of control. Your body is unable to create or effectively use its own source of insulin produced by your pancreas. Your liver also contributes to this dysfunction.

Insulin has a counter to it called glucagon. When insulin triggers sugar (sucrose, fructose, dextrose, maltose, corn syrup, caramel color, etc.) to enter cells to be utilized there, the glucagon attempts to offset the drop in blood sugar by causing the stored sugars (in the form of glycogen and fat) to be made into more sugar. When insulin is not working properly, this counter measure can exacerbate the problem.

You're probably smart enough to figure out the fact that insulin and this special mediator are one in the same. But if you think that the only condition it controls is diabetes – you're dead wrong. It has more influence than just that. You shouldn't let this bother you too much because most of conventional medicine missed the boat on this as well.

The bottom line here is this special mediator does not just apply to diabetes... and that's where modern medicine has gotten it totally wrong. And that's why I've labeled it your master hormone... because it's not just an issue with diabetes... it's an issue with ALL chronic diseases. Insulin plays a key factor in all these diseases.

In my family practice, I witnessed firsthand how controlling this essential master hormone not only helped diabetes, but other chronic diseases and conditions as well. People with imbalanced insulin experience elevated risks of a variety of other illnesses including heart disease and stroke, blindness, nerve disease and pain, kidney damage, skin disorders and more.

Let me show you some more good examples backing my conclusion on these chronic diseases, and then I'll present you with some proven ways that can help you take better control of this health-altering mediator.

Triumph Over Breast Cancer and Live a Stress-Free Life without Worry

It's been known for some time that consuming excess sugar depresses your immune system.^{14,15} In the case of breast cancer, an autoimmune disease, insulin resistance can be a major culprit.

Not only can your master hormone be a major culprit in causing breast cancer, insulin resistance has been shown to increase your risk of late-stage breast cancer and death.

Researchers at the Women's College Hospital in Toronto

came to the conclusion that there could be two reasons for this:

1. Breast cancer diagnosis may be delayed in women with diabetes because of the other health concerns that get more attention.

2. More importantly, diabetes may promote more rapid growth of tumors because too much insulin can be a growth factor for breast tumors.

In the five-year study, researchers examined the stages of the disease when the women were found to have invasive breast cancer.¹⁶ The analysis showed that:

- Out of about 38,000 women in the study with breast cancer, approximately 16 percent had diabetes.
- The women with breast cancer who had diabetes were at a much higher risk of having advanced stage breast cancer (Stages II-IV) than women without diabetes:
 - 14 percent more likely to have Stage II breast cancer.
 - 21 percent more likely to have Stage III.
 - 16 percent more like to have Stage IV.

The study also found that diabetes increased the chances of having larger tumors and cancer that had spread to lymph nodes. In the words of study author Dr. Lorraine Lipscombe, “In addition, the risk of advanced stage breast cancer was greatest in younger women and those with longer-standing diabetes.”

This is significant eye-opening data on increased breast cancer severity risks from diabetes. But to me, the study didn't place enough emphasis on the hidden culprit. Dysfunctional insulin is the source behind all this. Why not focus in on fixing the source of the increased risk and find ways to reduce the excessive insulin and its potential as a growth factor of breast tumors?

Instead, mainstream medicine continues throwing drugs at the problem instead of fixing the root cause... your master hormone, insulin. Don't forget about our friend Stamatis who was diagnosed with terminal lung cancer only to return home and be cured. I guarantee that part of his incredible recovery

was fixing his body's master hormone.

I'll have more on how you can naturally balance insulin coming up. Meantime, let's continue looking at other chronic conditions where insulin can be a trigger to these serious health challenges.

Mend Your Body's Master Hormone to Keep Your Memory and Cognitive Powers Sharper than Ever

In 2005, researchers discovered that your pancreas is not the only organ that produces insulin. Surprisingly enough, your brain also produces insulin. In fact at first, Alzheimer's was being called "type 3 diabetes" by many. For your brain cells to flourish and survive, your brain needs to produce the necessary insulin.

So why did researchers initially deem Alzheimer's as a new type of diabetes? Along with glaucoma, researchers suggest that due to similar pathways that lead to type 2 diabetes, a drop in brain insulin production could lead to degeneration of your brain cells. Studies have found that people with lower levels of insulin and insulin receptors in their brain often have Alzheimer's.¹⁷

The rub on all this is that researchers have discovered that insulin does way more than simply regulate your blood sugar. And interesting enough, unlike other bodily cells (like muscle cells), your brain does not require glucose. Yet, if your diet consists of an over indulgence of sugars and certain grains, you could be bombarding your brain. This bombardment overwhelms your brain with excessive levels of glucose and insulin that can blunt proper signaling by your master hormone.

In fact, I feel that this overwhelming attempt by your brain to burn unnecessary glucose is one of the primary factors involved in Alzheimer's disease and other brain disorders. Certainly Dr. Rosedale, one of the world's foremost experts in nutrition and metabolic medicine,¹⁸ also agrees with my view on this and

openly lectured on it in the late 1990s.¹⁹

As reported by *WebMD News* in 2014, new research indicates people with type 2 diabetes may lose more brain volume than expected as they age.²⁰ Here are some of the findings noted by researchers in the study:

- Brain shrinkage doesn't appear to be linked to effects of diabetes on tiny brain blood vessels, instead...
- Shrinkage appears to be the result of how the brain handles excess sugar.
- The longer a patient had diabetes, the more brain volume loss occurred, particularly in gray matter – for every 10 years someone had the disease, it appeared as if their brain was about two years older than the brain of someone without diabetes (according to Dr. Bryan, lead researcher).

What does this really tell us? Well, the overriding issue of brain shrinkage doesn't appear to be the disease (diabetes) itself but how the brain handles excess sugar and insulin. As stated by Dr. Sam Gandy, director of the Center of Cognitive Health at Mount Sinai Hospital in New York: “This study suggests that chronic high levels of insulin and sugar may be directly toxic to brain cells. This would definitely be a potential cause of dementia.”²¹ I'll have more coming up in a subsequent chapter on how to build a healthier brain.

This section has yielded even more evidence as to how your master hormone can have profound affects beyond diabetes. In this case your brain can not only see its volume shrink from too much sugar and insulin, but it produces its own insulin as well. Both of these scenarios can contribute to Alzheimer's and dementia issues.

Fixing insulin imbalance will go a long way toward supporting your overall health... in this case, a healthier brain. Conventional medicine continues to prescribe drugs of all types to try and fix dementia issues. But once again, they are only treating the symptom of a much bigger issue – faulty insulin function.

A Smarter Way to a “Happy” and Vibrant Heart

The connection between cardiovascular disease and out-of-control insulin levels is pretty daunting. According to the CDC and the American Heart Association:^{22, 23}

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

In type 2 diabetes, the pancreas actually makes enough insulin. The problem is that blood sugar levels increase high enough to trigger the cell membrane to become resistant to insulin. In response, the pancreas makes more insulin. Pretty soon the clinical picture we call “hyperinsulinemia” and “insulin resistance” occurs.

Eventually, when erratic blood sugar levels push this delicate hormone system, the balance tips and genetics are expressed such that there develops an abnormal function of the cell membrane receptors for insulin. At this point, blood sugar will remain high all the time, bouncing even higher when sugar is introduced by



eating. And when the blood sugar remains too high it damages the cells of other organs and systems including your heart.

There was a study several years ago referenced by my colleague, Dr. Rosedale, supporting what I'm saying about what can occur when you eat. This study provided evidence that heart attacks are two to three times more likely to occur after a high carbohydrate meal. How could that be?²⁴

Well, the immediate effect of raising your blood sugar from a high-carb meal results in a spike in insulin. This then triggers your sympathetic nervous system which can cause arterial spasm and constriction of the arteries. Insulin also causes retention of sodium which in turn leads to fluid retention, high blood pressure and possible congestive heart failure.²⁵

I hope by now that you're starting to see how insulin is more than a controlling issue with just diabetes – it's also the root cause behind most, if not, all other chronic diseases.

With heart disease, conventional medicine treats it just like other chronic conditions with a wide array of pharmaceuticals. Just like other chronic diseases, heart disease is a symptom of dysfunctional insulin. Fix insulin, as I'll soon show you how, and you'll avoid the disease.

Surefire Way to Protect Your Sight and Keep from Going Blind

Going blind is probably one of the most frightening conditions we all fear. Take away your sight, and for many people, it's almost the kiss of death. I'm not saying that you cannot adapt to this terrifying loss. But why not do all you can to prevent it from happening?

One surefire way to protect your eye health is to gain better control of your body's crucial master hormone. Here's some strong evidence behind what I'm saying.

If high blood sugar and insulin resistance persist for a period of time (around five years), eye complications can happen at an

alarming rate...²⁶

■ Glaucoma risk increases by 40 percent in untreated diabetes (type 2). This is a condition where pressure builds up in the eyeball, damaging the optic nerve and retina (the location where sensitive nerve endings detect images).



■ Cataract risk increases by 60 percent in untreated diabetes (type 2). A cataract is a clouded defect of an otherwise normal clear lens.

■ Diabetic retinopathy (non-proliferative and proliferative) results from damaged blood vessels and nerves of the retina.

The bottom line here: Eye complications that can lead to premature blindness are a result of an improper insulin function. By following my advice on how to balance out your “mediator,” not only will you snuff out type 2 diabetes, you’ll protect your critical eye health as well.

Conquer Excess Sugar and Carbs for Durable Muscles and Bones of Steel

When it comes to the health of your muscles and bones, insulin plays a key role as well.

Looking back into human history, there were periods of mass starvation caused by natural disasters such as droughts. These natural disasters ended up depleting much of the vegetation. This vegetation contained the complex carbohydrates humans and game animals relied upon for consumption.²⁷

Over time, the human body gradually developed defenses against these starvation disasters. The adaptation that occurred yielded a body that could convert any excess carbohydrates to fat. This stored fat could, in turn, be used for energy over time.

So today, you have a body well adapted to pull through just about any starvation disaster. But we live in a time where any sort of disaster (with a few exceptions) that could cause widespread famine is pretty much unheard of. The issue is our food supply is loaded with an overabundance of grains, starches and sweets. These excess carbohydrates bombarding your diet often lead to out-of-control insulin levels.

One of the consequences of this excess insulin being generated by all these carbohydrates is the production of fat. The high insulin affects your body's ability to shed the fat and build muscle. When your body's master hormone is disrupted with a diet of sugar and carbs, there is a miscommunication in your body about where to store excess fat. Some of the fat will be stored in your abdomen and liver. This throws your liver function into a tailspin and starts a process that breaks down muscle and bone – causing weakness and osteoporosis.²⁸

Along with the steps I'll be recommending for you to better control insulin, there's a vital mineral that can help you better manage this. I'll have more coming up once we get through more examples of how this can impact your health.

Get Your Brain to Listen to Stay “Lean and Mean”

When your blood sugar becomes elevated, insulin sends a message to store the extra energy – most of which is stored as fat. At the same time, a hormone called leptin is produced in the fat cells. The equation is quite simple – the more fat you have, the more leptin is produced.

You may be thinking – so why is this such a big deal?

Well, this is a big deal because leptin plays a role in the

accuracy of your master hormone, and whether you become insulin resistant or not. In addition to telling your brain what to do with the available energy, leptin in itself is an important mediator because it also tells your brain:²⁹

- When to eat...
- How much to eat...
- When to STOP eating!

If you're insulin resistant, there's a good chance you are leptin resistant as well. Due to this, your brain basically ignores leptin's messages. This results in chronic hunger, over-indulging, the inability to efficiently burn fat and typically results in obesity.

I'm sure you're well aware of the obesity crisis. Based on facts from the CDC, here's just a taste of the disturbing epidemic spreading across this great country of ours:^{30, 31}

- More than one-third (34.9 percent or 78.6 million) of U.S. adults are obese.
- The estimated annual medical cost of obesity in the U.S. was \$147 billion in 2008; the medical costs for people who are obese were \$1,429 higher than those of normal weight.
- Obesity is higher among middle age adults, 40-59 years old (39.5 percent) than among younger adults age 20-39 (30.3 percent) or adults 60 or above (35.4 percent).
- Approximately 17 percent (or 12.7 million) of children and adolescents aged 2-19 years are obese.
- In 2011-2012, 8.4 percent of two- to five-year-olds had obesity compared with 17.7 percent of six- to 11-year-olds and 20.5 percent of 12- to 19-year-olds.

The good news is that with lifestyle changes, including a proper diet and exercise, this can be avoided. The key is following a plan that helps better balance insulin. Coming up, I'll provide you with the steps that will help you fix insulin and avoid becoming an obesity statistic.

Defeat this Hidden Syndrome to Shore Up Your Cardio System and Stay Slim at the Same Time

Obesity and insulin resistance can also lead to a hidden threat often overlooked by most mainstream doctors – metabolic syndrome. Metabolic syndrome is a combination of underlying health disorders that can increase your risk of heart disease and diabetes.³²

There are many conditions that can characterize metabolic syndrome. However, it appears that the dominant underlying risk factors are obesity and insulin resistance. Once again, if insulin is running rampant, here is another case where your health can be significantly impacted.

It's estimated that as many as one in four American adults over the age of 30 have metabolic syndrome. And surprisingly, the vast majority of those affected don't even know about it. The bottom line with metabolic syndrome – control your body's essential master hormone with its insulin signaling, and you're on the right path. More details on how to do this starting in chapter 2.

Stay Younger, Triumph Over Disease and Enjoy Life to the Fullest

With all that I've discussed in this chapter concerning how insulin impacts your overall health, the effects really go beyond these examples of chronic illnesses and conditions.

What do I mean by that?

After helping people in my family practice for years to gain control of this vital master hormone, I've come to the conclusion that controlling your insulin signaling is paramount to enjoying life to the fullest and staying healthy while you age. Insulin resistance is not just the basis for all these chronic diseases, it is the basis for aging itself. Dr. Rosedale and others share my view

on this conclusion as well. And most of the medical community agrees that aging is a disease.³³

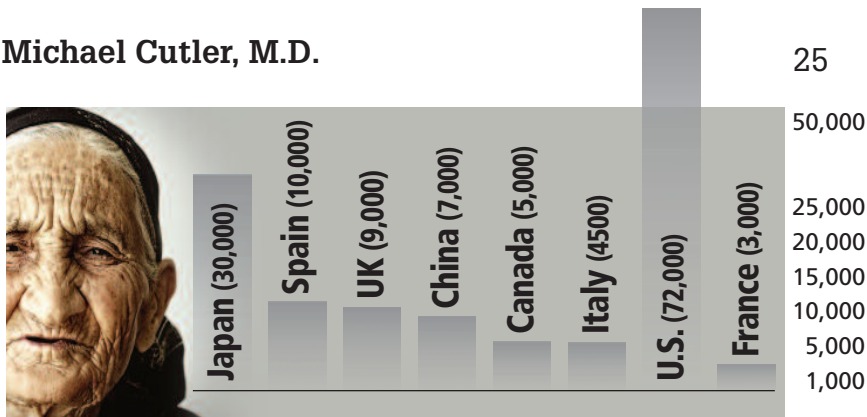
Triggered by dysfunctional insulin, chronic illnesses and conditions such as diabetes, cardiovascular disease, obesity, cancer, dementia and autoimmune diseases, are really symptoms of the aging disease.^{34,35} Get your critical master hormone under control and prevent premature aging, as well as all these chronic diseases.

But is there anything to learn from people who live to a mature age? The answer is YES, and fully supports why I believe balancing your master hormone is key for a disease-free life.

Common Health Denominator Provides Proof Positive of Your Key to Living Disease-Free for Decades

Centenarians are people who reach the age of 100 years and beyond. This area of the population is one of the fastest growing. And it's not only in the U.S. In many cases it's worldwide as well. Here are a few facts on centenarians that will help you put this more into perspective:³⁶

- Current estimates say around 450,000 people worldwide are 100 years of age or older.
- The U.S. has the largest number of centenarians with around 72,000. At the current estimated rate of increase, there could be close to a million Americans 100 years or older by 2050.
- By far, when looking at the largest growth in centenarians per its population, Japan appears to be exceeding all others. At 30,000 today, that's almost a quadruple increase over the last 10 years. If this dramatic increase continues, Japan may rival the U.S. in sheer numbers down the road.



The number of centenarians is increasing around the world. The key common denominator uncovered as to why these people live to 100 and beyond is low insulin levels... their insulin is very much under control.

With more and more people living to 100 or longer, I dug deeper to try and understand why. At the same time, it's important to note that living longer in itself is not a desire felt by the majority of people. In whatever time you have on this beautiful planet, people want to be happy, active and be free from painful chronic illnesses.

Like I stated earlier, I don't expect you to just take my word for it on how important insulin function and sensitivity are. What my colleague, Dr. Ron Rosedale, reveals on centenarians adds more support to the importance of this mediator and how it's a preventative measure and cure-all for chronic disease.

During one of his many lectures, Dr. Rosedale disclosed some eye-opening info about major centenarian studies ongoing at the time. These studies were searching for the variable (or variables) that could be acknowledged as the silver bullet behind why these people lived to at least 100. The studies were seeking answers to simple, yet pondering questions like:³⁷

- Why did centenarians become centenarians?
- Why were/are these folks so lucky?
- Was their longevity based on things like low cholesterol, exercise frequency, living a clean life, etc.?

Amazingly, what was discovered was that these folks had very little in common with one another. Some even smoked... others didn't exercise all that much... and some didn't have the calmest disposition.^{38, 39}

But one key common denominator was eventually identified. The common denominator all the centenarians in the studies had was low insulin levels... balanced and under control. To live to 100, they had to be relatively free from chronic disease up to that point. Otherwise, they wouldn't be around.

Now, this says nothing about their quality of life. But the fact that their master hormone was functioning on all cylinders provides an amazing clue as to why they lived to 100 or beyond.

Like I said earlier, people don't want to necessarily live to 100 if it means a life of pain, disability and popping more and more pills. But coming up in chapter 2, I will begin to show you how you can live a healthy and active life by naturally fixing and maintaining balanced insulin. Fix this, and regardless how long you spend on this beautiful planet, you will enjoy a robust disease-free life for your time here.

Ready to Move to an Out-of-the-Way Place to Live an Active and Robust Life?

So, if you want to be incredibly happy and live an active life free from chronic disease and disabilities, all you have to do is move to Ikaria, or other exotic "Blue Zone" locations like Okinawa, Sardinia and Costa Rica, right?

Well, you could, but there's actually a designated "Blue Zone" right here in the U.S. in Loma Linda, California. Researchers were initially shocked that such a place could exist in the U.S. – with all our tendencies for high-stress living, lack of exercise, fast-food diets and other common adverse health habits.

Loma Linda is made up of Seventh-day Adventists who shun smoking, drinking, dancing and avoid TV, movies and other media distractions. Members follow a "biblical" diet where they



The island of Ikaria where Stamatis Moraitis returned to die, but was cured of his terminal cancer is one of a few locations deemed as “Blue Zones.” These are little-known but very special places tucked away around the world where people who live there stay active and free from chronic disease well past the age of 90... and in many cases become centenarians (people 100+).⁴⁰

Many studies have been conducted looking to uncover why these people, like Stamatis, live such robust lives. One particular study took a closer look at the over-80 age population on Ikaria.

The “Ikaria Study” concluded that “modifiable risk factors such as daily physical activities, healthy eating habits, smoking avoidance, frequent socializing, mid-day naps and extremely low rates of depression, might depict the secrets of the long-livers.”⁴¹

When compared to a typical Mediterranean diet, Ikarians eat a great deal of fish and vegetables, and relatively low levels of meat. Most food is cooked in olive oil and wild greens and herbs are freshly gathered from the hillsides for food and medicinal purposes. Other foods include fruits, legumes, goat’s milk, honey and wholesome Ikarian bread. Islanders make their own wine (without preservatives) and it’s pretty much a staple at every meal.^{42,43}

drink only water (no sodas) and focus on eating grains, fruits, nuts and vegetables. Their favorite foods include avocados, salmon, nuts, beans, oatmeal and soy milk. They completely avoid sugar except natural sources from fruits.⁴⁴

Research shows that followers of the “Adventist” diet have the lowest rates of heart disease and diabetes in the U.S... and very low rates of obesity.⁴⁵ Not surprising, exercise is a common thread in Loma Linda as well... with daily walks... bicycling... and health club activities. These folks are not just sitting around looking out the window – they’re incredibly happy, healthy and active.

“Blue Zones” are living proof that if you follow my advice and fix your insulin function, you’re in for a healthy robust life. And you don’t need to move to an out-of-the-way place or even Loma Linda. Using the steps I outline in this book, you can gain control of this crucial master hormone and live the healthy, active “Blue Zoner” life you deserve.

CHAPTER 2

Supercharge Your Body with Key Nutrients to Nurture Your Master Hormone and to Prevent Chronic Illness

Since the early days of the Apollo program, scientists knew that extended space travel accelerates the aging process. They just couldn't fully put their finger on why.

Why did the astronauts feel weak and tired, and lose bone and muscle? They often didn't feel like eating and occasionally felt numbness and tingling. And sometimes they even found themselves challenged to get all their assignments done.⁴⁶

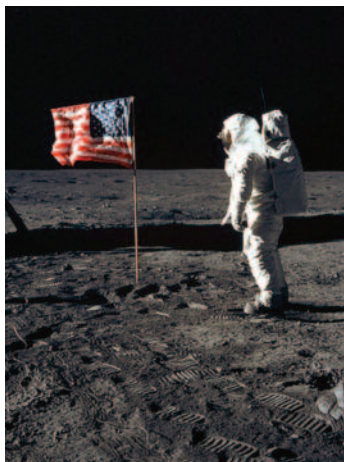
Fortunately now, the \$100 billion International Space Station provides the perfect lab to study more on what goes on during space travel.⁴⁷

Scientists discovered that the astronauts' hearts worked less efficiently in space. Essentially, their cardiovascular systems were aging about 10 times faster than normal.^{48, 49}

As reported in *Clinical Interventions in Aging*, researchers found a very simple reason why.^{50, 51} The culprit was there all along. It was just so simple it got overlooked.

In this case, it's the loss of an essential nutrient during space travel that provides the missing piece to the puzzle.

Available here on Earth, this basic nutrient is crucial to your overall health. In fact, I've uncovered how this and other vital nutrients can help boost the health of your insulin.



During space travel, astronauts would feel weak and tired, and often wouldn't feel like eating. They sometimes even found themselves challenged to complete their assignments. NASA scientists eventually uncovered the mystery of an essential nutrient lost in space... a vital nutrient readily available here on earth.

Elevated insulin levels can create a vicious cycle where it signals your pancreas to continue flooding your system with insulin (thinking you don't have an adequate supply). In this chapter, I'll show you how certain nutrient deficiencies can trigger their own vicious cycles with your body's vital master hormone and what you can do to prevent it.

Scientific studies have shown that insulin resistance can trigger increased excretion of certain nutrients from your body in your urine.⁵² This is part of a dangerous scenario whereby you need these nutrients for your overall well-being, but due to faulty signaling of insulin, elevated levels cause excess flushing of some vital nutrients.

Let's take a closer look at some of these important nutrients... starting with the mineral astronauts not only need to protect their heart health, but the one they take to make sure their DNA doesn't deteriorate while in space.⁵³

Take Action Against this Mineral Deficiency to Feel Your Best with Added Energy, Blood Pressure Control, Durable Bones and More...

Magnesium is the fourth most abundant mineral in your body. You probably know it best for its role in laxatives (Phillips[®] Milk of Magnesia, magnesium citrate) or in antacids (Maalox[®], Rolaids[®]). And I'm sure you've heard before how magnesium plays a part in more than 300 metabolic reactions such as:⁵⁴

- Insulin action
- Glucose regulation
- Energy production
- DNA synthesis
- Lipid metabolism
- Blood pressure control
- Muscle contraction
- Nerve innervations
- Bone strength

This is pretty amazing info about this mineral. However, I can flat out tell you... this is just the tip of the iceberg. I've observed how other doctors have gone into great depth about the 300 metabolic reactions. But without taking you on too much of a technical deep dive, what I found about magnesium is even more extraordinary. I unearthed a little-known study published in 2012 that detected 3,751 magnesium-binding sites on human proteins – a pretty powerful discovery as far as the overall importance of magnesium to your many biological processes.⁵⁵ A great example is how magnesium plays a role in your body's detoxification processes. Due to this role, it's a key component in helping you minimize damage from environmental chemicals, heavy metals and toxins.

What are some of the other consequences if you are deficient in magnesium?

Seventy percent of adults have low magnesium levels and most don't even realize it. Low magnesium levels are linked to a number of common illnesses including heart disease.⁵⁶ So when you consider that only a mere 25 percent of adults in the U.S. even consume the recommended daily allowance (RDA) of approximately 400 mg daily, you can understand why I'm so concerned about magnesium deficiency.⁵⁷

Low magnesium levels are always something I'm on the lookout for in my family practice. Since there are many overlooked illnesses due to low magnesium, it's something I'm very watchful of.

With magnesium deficiency, an added challenge comes in discovering whether a deficiency actually exists. Why doesn't a routine blood (serum) test conducted by your doctor reflect tissue magnesium levels or function?

Well, an astounding 99.7 percent of total body magnesium is found in your bones, muscles and tissues – while you'll only measure 0.3 percent in serum. Therefore, serum magnesium levels have little correlation with your magnesium level in specific body tissues.⁵⁸ Even the other methods of detecting low magnesium (from red blood cells, saliva, urine and magnesium tolerance tests) are similarly not satisfactory. Moreover, the magnesium serum levels reference range for normal is too low and already represents a mild magnesium deficiency.⁵⁹

Thus, because the diagnosis of low magnesium by lab tests is vastly underestimated, magnesium deficiency is now considered the silent epidemic of our times. Since we cannot look to lab tests to accurately detect low magnesium, I recommend you do what I do and know some of its early signs and symptoms.⁶⁰

Early signs of magnesium deficiency:⁶¹

- Loss of appetite
- Nausea
- Vomiting
- Fatigue
- Weakness

Symptoms as deficiency worsens:⁶²

- Numbness
- Tingling
- Muscle contractions and cramps
- Seizures
- Personality changes
- Abnormal heart rhythms
- Coronary spasms

With all this said about the importance of magnesium within your system, it's one of the nutrients that can be excessively lost in your

urine due to high insulin levels and insulin resistance. According to the National Institutes of Health (NIH), people with insulin resistance and/or type 2 diabetes can have increased urinary magnesium excretion.⁶³

This is truly a case where less equals more. What I mean by that is when your master hormone has things under control and your insulin levels aren't elevated, the more magnesium your body should be able to retain. And it doesn't stop here. Remember how I revealed earlier how the loss of certain nutrients creates another vicious cycle when it comes to elevated insulin levels? Well, I can tell you that magnesium deficiency is a perfect example.

Here are a few study and research examples showing how magnesium levels can potentially impact insulin sensitivity and resistance:

- Reported in *Nutrients*, 2013: Study findings indicate that, “Dietary magnesium is inadequate among non-diabetic individuals with MetS [metabolic syndrome] and suggest that increasing dietary magnesium to meet the RDA has a protective effect on insulin resistance.”⁶⁴
- Published in *Diabetic Medicine*, 2013: Researchers discovered that magnesium intake was a significant factor countering type 2 diabetes in the Japanese population. This was particularly true among those “with insulin resistance, low-grade inflammation and a drinking habit.”⁶⁵
- Released in an American Diabetes Association (ADA) 2013 study: Results showed that “higher magnesium intake reduces risk of impaired glucose and insulin metabolism...” And researchers concluded that: “Magnesium intake may be particularly beneficial in offsetting risk of developing diabetes among those at high risk.”⁶⁶
- Published in *The Journal of Nutrition*, 2013: Study researchers concluded that: “Consistent with other studies, a higher magnesium intake was associated with lower fasting glucose and insulin.”⁶⁷

Another study took things even further and found that for those of us who do not have diabetes, there is a protective (preventive effect)

from magnesium supplementation.⁶⁸ This is significant because about one in three American adults already have insulin resistance and/or metabolic syndrome and don't know it.⁶⁹

So not only is magnesium deficiency a big concern when it comes to contributing to insulin resistance, proper intake of magnesium may even provide a protective barrier against insulin resistance itself. Now you understand why I feel magnesium deficiency can lead to such a vicious cycle.

If you're not getting enough magnesium in your everyday diet, then you're not maximizing your protection against insulin resistance. If you have insulin resistance, chances are you will excrete higher levels of magnesium in your urine. The bottom line with inadequate magnesium consumption is that it promotes a seemingly endless cycle of:

- Low magnesium levels.
- Elevated insulin and glucose levels.
- Excess magnesium urinary excretion.

In addition to high levels of insulin and insulin resistance, there are many other ways magnesium levels in your body can be reduced:⁷⁰

- Refined sugars cause increased urinary losses.
- Stress uses it up more quickly (anxiety, insomnia, heavy exercise, surgery, etc.).
- Certain medications can lower your supply: Diuretics (Lasix); proton-pump inhibitors (Prilosec); zinc supplements (over 142 mg/day); gentamicin, digoxin, penicillamine and chemotherapy drugs.
- Calcium supplementation with more than 1:1 ratio calcium to magnesium may lead to a magnesium reduction.
- Alcohol consumption increases urinary losses (30 percent of alcoholics).
- Kidney, liver or heart disease can trigger a lower supply.
- Poor intestinal health reduces absorption with conditions like Crohn's, colitis, celiac and diarrhea states.

- Hyperthyroidism, diabetes mellitus and SIADH (anti-diuretic hormone excess) can reduce your magnesium supply.
- Once over age 55, absorption decreases and urinary loss increases.

Despite some evidence that soil and crop levels are becoming depleted of many nutrients including magnesium, there are many natural foods I recommend you consider that can help boost your dietary supply. The following provides you with some foods rich in magnesium.⁷¹

Food (100 grams)	Magnesium Content (mg)
Rice bran, crude	781 mg
Seaweed, agar, dried	770 mg
Coriander leaf (spice), dried	694 mg
Pumpkin seeds, dried	535 mg
Cocoa, dry powder, unsweetened	499 mg
Basil, dried	422 mg
Flaxseed	392 mg
Cumin seed (spice)	366 mg
Brazil nuts, dried	376 mg
Parsley, freeze dried	372 mg
Almond butter	303 mg
Cashew nuts, roasted	273 mg
Whey, sweet, dried	176 mg
Leeks, freeze dried	156 mg
Kale, scotch, raw	88 mg

You have many natural food choices containing magnesium that help support healthy insulin. Source: *Greenmedinfo.com*

I always believe that your best source of almost any nutrient is through eating natural whole foods. For magnesium, the graph on the previous page gives you a pretty good mix of choices for this important mineral. When it comes to “Blue Zoners” (those people who live in select areas of the world and live virtually free of chronic disease), they have a mixture of magnesium-rich foods in their regular diets including... rice, almonds, kale and a variety of nuts.⁷²

However, I realize there may be situations where you just aren’t consuming enough of these foods. And with around 70 percent (some sources say it may even be higher at 80 percent)⁷³ of adults having low magnesium levels, a good supplement can help complement your diet. But which of these supplements are best?

The most prevalent form of magnesium supplement I’ve seen is produced using magnesium oxide, the second most abundant compound in the Earth’s crust (35 percent). But that doesn’t mean this magnesium compound is the best supplement form for you.⁷⁴

Much better magnesium compounds are those that dissolve well in liquids, are more completely absorbed in the gut and are bio-available. According to studies,^{75,76} these are not magnesium oxide or magnesium sulfate, but rather magnesium aspartate, magnesium citrate, magnesium lactate and magnesium chloride. I would also highly recommend avoiding magnesium supplements containing magnesium stearate, a prevalent but potentially hazardous additive.

Another type of magnesium, magnesium glycinate, tends to provide a high level of absorption. And a newer type of magnesium, magnesium-L-threonate, is showing great promise as it has the ability to penetrate the mitochondrial membrane.⁷⁷

With magnesium being the fourth most abundant mineral in your body, and with 70 percent to 80 percent of American adults coming up short, you can certainly understand my concern. And when you add the fact that low magnesium can contribute to a malfunctioning master hormone and insulin resistance, isn’t it time to take this oft-forgotten mineral more seriously? I know I am for my family, my patients and myself.

Why This Essential Trace Element is Vital for Managing Cholesterol, Supercharging Your Metabolism and Protecting Your “Mediator”

Another important mineral essential for your overall health is chromium. Chromium is defined as an “essential trace element” because very small amounts are required by your body. Chromium was first discovered a few centuries ago in the late 1790s in France. But it really took until the 1960s before it was recognized as the important trace element it is.⁷⁸

Chromium is primarily found in two distinct forms:⁷⁹

1. Trivalent (chromium 3+) – biologically active and found in food.
2. Hexavalent (chromium 6+) – a toxic form found in industrial pollution.

Obviously, trivalent is the chromium form I’m focused on here. The other form, hexavalent, is based on environmental conditions that need to be addressed/discussed in an entirely different forum than this book.

Why is chromium so important to your body and what are some common uses? Despite its relatively small amount in your body, chromium:^{80,81}

- Has been used for depression and managing “bad” and “good” cholesterol levels.
- Appears to be directly involved in carbohydrate, fat and protein metabolism.
- Is known to enhance the action of insulin.

Similar to magnesium, chromium is an important mineral in helping insulin operate on all cylinders. It’s not uncommon for people with diabetes to be deficient in both magnesium and chromium. Your body uses these two essential minerals to make insulin and to enhance its effects⁸² – helping to manage your crucial master hormone.

As was the case with magnesium and its influence on insulin, chromium deficiency can create a similar cycle. High insulin levels due to a diet high in simple sugars can spike chromium excretion in your urine.⁸³ And since chromium is known to enhance the effects of your body's master hormone, a deficiency just fuels the vicious cycle of insulin resistance.

A study approved by the Human Studies Committees of the USDA and Georgetown University yielded some interesting results. Researchers suggested that:⁸⁴

- “Dietary changes that could decrease insulin levels in men, especially those with elevated insulin levels, would reduce chromium losses.”
- “Increased chromium losses were due to increased consumption of refined carbohydrates.”
- “Reduced insulin levels could, in turn, reduce chromium losses.”

Even though chromium is not as abundant in your body as magnesium is, it does have an overall effect on the efficiency of insulin. There are some things I recommend you do to help supercharge your body with this essential trace element.

There are quite a few vegetables and other foods that have both magnesium and chromium minerals, like broccoli, spinach, beans and the Peruvian grain-like plant quinoa. Herbs and spices are also surprisingly good sources.⁸⁵ “Blue Zoners” enjoy many chromium-rich foods in their diets including: Beans, potatoes, whole wheat bread, bananas, garlic and wine.⁸⁶

Here's a more specific chart (based on data from the National Institutes of Health) focused on natural foods that can help you boost your chromium levels:⁸⁷

Food	Chromium Content (mcg)
Broccoli, ½ cup	11 mcg
Grape juice, 1 cup	8 mcg
English muffin, whole wheat, 1	4 mcg

Potatoes, mashed, 1 cup	3 mcg
Garlic, dried, 1 teaspoon	3 mcg
Basil, dried, 1 tablespoon	2 mcg
Beef cubes, 3 ounces	2 mcg
Orange juice, 1 cup	2 mcg
Turkey breast, 3 ounces	2 mcg
Whole wheat bread, 2 slices	2 mcg
Red wine, 5 ounces	1-13 mcg
Apple, unpeeled, 1 medium	1 mcg
Banana, 1 medium	1 mcg
Green beans, ½ cup	1 mcg

Many sources only recommend adult males and females get between 20 and 35 micrograms (mcg) of chromium on a daily basis. However, I believe a much higher amount is necessary (200 mcg) to not only better handle a potential deficiency, but to process all the hidden sugars in the food we consume today.⁸⁸ I'll have more on these hidden sugars coming up later in this chapter.

Since getting high enough amounts of chromium from natural foods (as listed above) might be challenging, you might want to consider a high-quality chromium supplement to complement your healthy diet. Chromium is an important mineral in helping to balance your insulin... your master hormone... and in turn, helping you avoid chronic disease.

Fix Your “Mediator” to Triumph Over High Blood Pressure and Congestive Heart Failure

Another interesting mineral I will briefly mention here, and one that has triggered a great deal of controversy in medical science, is sodium.

Known more by its common everyday name as salt, consuming too much sodium can cause serious health issues in some people. Like I said, there is some controversy here in that some research actually shows, that in some cases, salt may help your body against disease.⁸⁹

But when it comes to your body's master hormone and sodium, excess insulin causes:⁹⁰

- The retention of sodium, which causes...
- The added retention of fluid, which can lead to...
- High blood pressure, which can result in congestive heart failure.

I would recommend not sprinkling on additional salt to the foods you eat. Most foods already contain natural amounts of sodium. If you must add salt for seasoning, I recommend you look at a natural sea salt or Himalayan salt. But fixing insulin is key to avoiding the excess retention of sodium and added risk of congestive heart failure.

Slash Your Risk of Insulin Resistance by Simply Enjoying Outdoor Activities Under the Soothing Sun

Vitamin D is what's called a fat-soluble vitamin and is not naturally found in many foods.⁹¹ One of the most common ways for you to obtain vitamin D is through natural sunlight. This is not all that popular these days with the skin cancer epidemic that has been sweeping the country. People tend to stay indoors to supposedly protect themselves or lather up with carcinogen-laden sunscreens when going outside.

So why is vitamin D so important and what does it have to do with your master hormone. Well, vitamin D is itself a hormone that also:⁹²

- Promotes calcium absorption in your gut.
- Maintains adequate serum calcium and phosphate levels for bone mineralization.
- Is needed for your overall bone growth.



- Helps protect older adults from osteoporosis.
- Modulates cell growth, neuromuscular and immune functions.
- Helps reduce inflammation.

With all these important roles vitamin D plays and with chronic illness rising astronomically, do we have strong evidence that vitamin D deficiency is a major cause of chronic conditions? Well, I can tell you the jury is still somewhat out on this.

But one thing I know for sure, vitamin D is even bigger than all the benefit bullets I listed above... vitamin D is a major protector of your insulin... your master hormone. This is something I believe mainstream medicine has completely overlooked.

And you don't have to just take my word for it. A study I uncovered published in *Diabetes Care* (2010) revealed the correlation between people with elevated A1C levels (hemoglobin blood sugar levels) and vitamin D insufficiency. Researchers stated that "Serum 25(OH)D levels were inversely associated with A1C levels in subjects age 35-74 years..." Researchers concluded that "screening people with elevated A1C levels for vitamin D insufficiency should be considered."⁹³

Of further note on the study, it examined the association between

vitamin D and A1C levels in 9,773 adults who participated in the 2003-2006 National Health and Nutrition Examination Survey. So, the proof here of the significance of how important vitamin D is to protecting your insulin master hormone function was solidly based on a very large sample of participants.

I believe that obtaining vitamin D from sun exposure, whereby you avoid burning your skin, is safe and one of your best means to get this all-important vitamin and protect your master hormone.

When ultraviolet rays from the sun contact your skin, vitamin D synthesis is naturally triggered.⁹⁴ To me, this is your best source – even better than certain foods and supplements. “Blue Zoners” tend to get plenty of natural vitamin D in their outdoor activities that include... regular exercise, tilling their gardens and cultivating their olive trees (like our friend Stamatis on the Greek Island of Ikaria).

To emphasize even more how synergistically vitamin D works with insulin, here are a few more technical examples I uncovered:

- Research suggests that sun avoidance may play a key role in the development of insulin dependent diabetes. The further you live away from the equator, the greater your risk of being born with or of developing type 1 diabetes.⁹⁵
- Your risk for diabetes increases substantially if your blood vitamin D level is below 14 mg/ml (optimal is 35-80 ng/ml). If you already have diabetes, then you should know that a vitamin D deficiency worsens diabetes by decreasing natural insulin secretion.^{96,97}
- As reported in the *Journal of Biomedicine and Biotechnology*: “Several studies have indicated a relationship between vitamin D status and the risk of diabetes or glucose intolerance. Vitamin D has been proposed to play an important role and to be a risk factor in the development of insulin resistance and the pathogenesis of type 2 DM [diabetes mellitus] by affecting either insulin sensitivity or β -cell function, or both.”⁹⁸
- According to a study published in 2015 in the *Endocrine*

Society's *Journal of Clinical Endocrinology & Metabolism*, "People who have low levels of vitamin D are more likely to have diabetes, regardless of how much they weigh." And according to Manuel Macías-González, Ph.D., one author of the study, "The study suggests that vitamin D deficiency and obesity interact synergistically to heighten the risk of diabetes and other metabolic disorders. The average person may be able to reduce their risk by maintaining a healthy diet and getting enough outdoor activity."^{99,100}

- In a study conducted in India, researchers found that "every unit increase in vitamin D level after supplementation of the vitamin decreased the risk of progression to diabetes by 8 percent." In addition, after the conclusion of the study, participants who received vitamin D supplementation had much higher vitamin D levels in their blood and lower fasting blood glucose levels when compared with the group not receiving vitamin D.¹⁰¹

So what's the complete picture on how to make sure you get enough vitamin D to help strengthen your master hormone? The first thing I recommend you do is get your level tested. The blood test you need is called a 25(OH)D blood test. It can be done at any doctor's office, or home test kits are available that can be sent to a lab.

If you're below 35ng/ml, here are my standard recommendations to boost your level of vitamin D:

- **Sunshine exposure to your skin:** 20 minutes of sunshine daily (I recommend you sunscreen your face with a paraben-free sunscreen) will convert vitamin D in your skin to its activated form (D3) and maintain optimal levels. As I said earlier, this is at the top of my list for getting natural vitamin D.
- **Diet:** Foods rich in vitamin D3 are fish oils, cold-water fish, dairy products and butter. There is only one vegetable that has vitamin D, and that's the mushroom at 114 IU per cup.
- **Supplementation:** 1,000 International Units (IU) daily or 5,000 IU twice weekly of vitamin D3 is typically all you need to do to

boost and maintain your level adequately.

In a perfect world, these standard recommendations would be just fine. However, with all the importance this incredible vitamin has with balancing your master hormone, I'll be adding more to this coming up in chapter 6.

When it comes to supplementation, which vitamin D product is best? Unfortunately, many of the large vitamin manufacturers cheapen their product or put it into a form that will not absorb optimally. And current scientific literature does not adequately address the question of which product is best. However, the following link is a good place to start and shows you a review of vitamin D3 sources that tested with 100 percent vitamin D3 (Cholecalciferol, the bioavailable form) in their product: <https://labdoor.com/rankings/vitamin-d>

This is a wealth of info on vitamin D and how it can impact managing insulin levels. But it's important to remember that insulin influences more than whether you get diabetes or not – it's much, much more than that.

Too much insulin can be a growth factor for breast tumors... too much insulin can overwhelm your brain... too much insulin can be a factor in cardiovascular disease... too much insulin can lead to serious eye problems... and elevated insulin levels can impact normal aging. As you recall, I showed you how low insulin was the common denominator uncovered in the centenarians. And the "Blue Zoners" with their absence of chronic disease, they have their master hormone well- balanced and functioning on all cylinders. There's no reason why you cannot do the same.

“Forgotten” Nutrient Cuts Your Worries by Shielding You Against Cancer, Leukemia, Heart Disease and More...

Vitamin K has often received the dubious distinction of being called the “forgotten vitamin.” I know when I've talked about it in my family practice, most patients are not even aware of it. And the

same goes for a lack of knowledge in the mainstream medical community as well.

Recently, vitamin K has been brought more to the forefront for its role in your overall health and well-being. It's about time because it's something I know is very important to all of us. Foremost in this effort to raise awareness of this valuable vitamin has been Dr. Cees Vermeer, one of the top researchers in vitamin K. Others, like Dr. Joseph Mercola, have also contributed greatly to bringing awareness of this vitamin to the general public and the medical world as well.

The bottom line with vitamin K is that most people don't get enough of it to provide protection against the following health challenges:¹⁰²

- Arterial calcification, cardiovascular disease and varicose veins.
- Osteoporosis.
- Cancers: Including prostate, lung and liver.
- Leukemia.
- Brain health issues including dementia.
- Tooth decay.
- Pneumonia.

This is a pretty extensive list and something everyone should be more aware of. But for this book, I want to focus in on one of my greatest concerns – vitamin K's effects on insulin sensitivity.

As reported by the American Diabetes Association in a research study, "we have demonstrated for the first time that vitamin K2 supplementation for four weeks increased insulin sensitivity in healthy young men..." In addition, researchers summarized that "our results are consistent with previous studies that demonstrated improved glucose intolerance or relieved insulin resistance by treatment with vitamin K1 or vitamin K2 respectively."¹⁰³

And in another study involving older men and women, researchers concluded that "Vitamin K supplementation for 36 months at doses attainable in the diet may reduce progression of

insulin resistance in older men.”¹⁰⁴

These two studies provide plenty of evidence supporting why I believe vitamin K is so important in helping boost the health of your master hormone. And once again, keep in mind that managing your insulin levels is not just a diabetes issue – there are other chronic illnesses and conditions that can be triggered from elevated insulin as well.

To help make sure you boost your vitamin K intake, the list below shows you a few foods to consider adding to your daily diet:¹⁰⁵

Food	Vitamin K per serving (mcg)
Natto, 3 ounces (as MK-7)	850 mcg
Collards, frozen, boiled, ½ cup	530 mcg
Turnip greens, frozen, boiled, ½ cup	426 mcg
Spinach, raw, 1 cup	145 mcg
Kale, raw, 1 cup	113 mcg
Broccoli, chopped, boiled, ½ cup	110 mcg
Soybeans, roasted, ½ cup	43 mcg
Carrot juice, ¾ cup	28 mcg
Edamame, frozen, prepared, ½ cup	21 mcg
Pomegranate juice, ¾ cup	19 mcg
Okra, raw, ½ cup	16 mcg
Pine nuts, dried, 1 ounce	15 mcg
Blueberries, raw, ½ cup	14 mcg
Iceberg lettuce, raw, 1 cup	14 mcg
Olive oil, 1 tablespoon	8 mcg

Many healthy foods are available that contain vitamin K. Eating foods rich in vitamin K can help relieve insulin resistance.

Most of the examples on the previous page provide you with vitamin K1. Natto can help boost your vitamin K2 levels but is not very appetizing (some people can tolerate it). As far as supplementation, I recommend you look for a high-quality vitamin K2 product.

As with the other minerals and vitamins I've discussed in this chapter, vitamin K is an important nutrient in helping insulin function boost your overall health and protect you from chronic disease. Eating foods rich in vitamin K can eliminate your vitamin K deficiency and help relieve insulin resistance. Typical foods with vitamin K common in "Blue Zoner" diets are leafy greens (like kale), a variety of nuts and olive oil.¹⁰⁶

Eat Fresh Fruits and Veggies to Avoid Destructive Sugar Bombardments and Chronic Conditions

This is truly a case of less equals more. Keeping your consumption of sugar low can definitely help balance this all-important master hormone and give your health a boost.

But I think that there's more to sugar than meets the eye. There is sugar in almost every food that you eat. And the problem with all this is most of what's hidden in your food is not raw sugar. One of the most prevalent forms of hidden sugar in processed foods is high-fructose corn syrup (HFCS). There's a bit of controversy over HFCS as the FDA at one time ruled that it can be labeled as "natural" because it's made from corn.¹⁰⁷

However, I don't buy into the naturalness of HFCS because it comes from corn that is genetically modified (GMO). How can any GMO food, whether it's corn or anything else, be considered a



“natural” product? It certainly doesn’t get my vote. Plus, there are major issues with HFCS that I’ve been talking about for some time.

The results from a study presented at the American Society of Nephrology’s 42nd Annual Meeting found that the rate of obesity has increased sharply since the development of HFCS and that the prevalence of HFCS in processed foods may have something to do with it. Americans now consume 30 percent more fructose than they did 20 years ago, and even more so over the last few years.

The results of a Mayo Clinic study lead by James J. DiNicolantonio, a cardiovascular research scientist at Saint Luke’s Mid America Heart Institute, Kansas City, warn strongly against ingesting HFCS and other added sugars. Type 2 diabetes, cardiovascular disease and metabolic syndrome (insulin resistance) are the direct negative effects.

The study abstract contains a warning, which is fairly rare for buttoned-down scientists: “Added fructose in particular (e.g., as a constituent of added sucrose or as the main component of high-fructose sweeteners) may pose the greatest problem for incident diabetes, diabetes-related metabolic abnormalities and cardiovascular risk.”¹⁰⁸

The challenge with looking out for added sugar in the foods you eat is the hidden nature of the beast. Here’s a list of 15 sugars found on everyday food labels – many of which you’re probably not familiar with:¹⁰⁹

- Corn sweetener
- Corn syrup
- Dextrose
- Fructose
- Fruit juice concentrate
- Glucose
- High-fructose corn syrup
- Honey

- Invert sugar
- Lactose
- Maltose
- Malt syrup
- Molasses
- Sucrose
- Syrup

There may be more hidden examples coming out all the time as manufacturers try and disguise the amount of sugar found in their foods. The good news here is that fresh (preferably organic) fruits and vegetables which contain natural sugars (even fructose) are not necessarily the bad guys. The sugars I strongly advise you to avoid are the ones hidden in processed foods.

I also recommend you look to reduce your daily sugar intake. The World Health Organization (WHO) goes as far as to suggest that adults reduce their daily sugar intake to only 5 percent of total daily calories. Based on just an intake of 2,000 calories a day, that is equal to consuming only 25 grams of sugar (6 teaspoons per day).

As far as “Blue Zoners,” processed foods rarely, if ever, reach their tables. Whatever sugar they consume comes from natural fruits and vegetables.

Interestingly enough, one of the things you can do to help reduce your body’s sugar burden is to make sure you’re getting enough magnesium and chromium (details of which I discussed earlier in this chapter). Your body uses these two minerals to help your master hormone better manage the effects of the sugar bombardment.

Nurture Your Gut to Stay Slim and Fully Energized

You need energy in order for your digestive system to break down food, but much of that energy comes from the food itself. Unhealthy dietary habits such as eating too much processed

foods can hinder your digestive function. These processed foods can deplete your enzymes, probiotics and other factors critical for effective digestion.¹¹⁰

If you eat too many refined sugars, like HFCS hidden in many foods, the digestive havoc caused can also spike your glucose and insulin levels. The result is inflammation – another major culprit in “putting on the pounds” and slowing metabolism.

Your mitochondria, those tiny cellular engines that create energy for the body, are a central part of your metabolism and digestion. How quickly and efficiently the mitochondria can turn nutrients (such as glucose) into energy reflects your metabolic health.

If your mitochondria are inefficient, glucose gets stored as fat. When you’re not digesting properly, mitochondria don’t get the needed nutrients to produce energy and excess waste creates inflammation and toxic buildup. As a result, you’ll feel sluggish, tired and bloated. It’s all part of a complex, interrelated system where metabolism and digestion rely on one another to keep all the body’s systems fully energized and functioning at peak capacity.

A diet high in sugars, processed foods and unhealthy fats (trans fats) can lead to a buildup of unhealthy bacteria in your



gut, weight gain and insulin resistance. Obviously a way to minimize this exposure is to limit your consumption of sugar-packed processed foods and foods with trans fats. Switching to a diet rich in wholesome organic foods can help support a balance of healthy microflora in your gut. Plus, a high-quality probiotics supplement can complement your diet as well.

Inefficient digestion caused by an overflow of sugars into your system is another way that your body's essential master hormone can lose control and spike your insulin level.

Four Key Nutrients that Boost Your Health by Nurturing Insulin to Shield You Against Chronic Disease

In addition to sugar and digestive issues that can impact insulin levels, this chapter focused on important nutrients that can both positively influence insulin and be impacted by it when insulin levels become elevated. Here's a quick summary of key points on each nutrient:

- **Magnesium** – This nutrient is the fourth most abundant mineral in your body and plays a role in over 300 metabolic reactions. Elevated insulin levels can trigger excess flushing of magnesium through urination. Yet, studies show that magnesium can have a protective effect against insulin resistance. This can lead to a vicious metabolic cycle you want to avoid.
- **Chromium** – This “essential trace element” is vital to your overall health. Chromium can fall into a similar metabolic cycle as magnesium with insulin. High insulin levels can spike chromium excretion in your urine. Chromium is known to enhance your crucial master hormone while a deficiency just fuels the vicious cycle of insulin resistance.
- **Vitamin D** – This fat-soluble vitamin plays key roles in your overall health in many ways. One of the ways is how vitamin D can strengthen your vital master hormone. Studies show that a vitamin D deficiency can heighten the risk of insulin

resistance and other metabolic disorders.

- **Vitamin K** – This so-called “forgotten vitamin” has shown through research that it can relieve insulin resistance. And in one study over 36 months, vitamin K supplementation helped reduce the progression of insulin resistance in older men.

I can't emphasize enough how important these four nutrients are to well-functioning insulin. Along with nurturing your gut and keeping your sugar intake in check, these four nutrients play key roles in balancing this health-critical master hormone, and in turn help protect you from the ravage attacks of chronic disease.

Next up, I want to show you how environmental influencers (some even inside your home) can impact insulin and what you can do about it.

CHAPTER 3

How to Prevent Cancer-Causing Chemicals Hidden in Your Home and Food from Destroying Your Master Hormone

The family of four looked forward to enjoying their vacation time together.

The Esmond family had rented a luxurious \$800 a night condo at the Sirenusa resort overlooking Cruz Bay on the Caribbean island of St. John, U.S. Virgin Islands. What could possibly go wrong in such a beautiful setting?

On March 18, 2015, the condominium beneath the unit rented out by the family was sprayed with a pesticide. According to Judith Enck, administrator for EPA's region 2 (which includes the U.S. Virgin Islands), the banned pesticide methyl bromide was used "to deal with indoor bugs."¹¹¹

Two days later, on March 20, the family began having seizures and had to be hospitalized. The family's two teenage sons were eventually airlifted to a hospital in the U.S. where they remained in critical condition. Their parents, Stephen and Theresa are in rehabilitation therapy as of this writing.¹¹²

While the Esmond family struggles to recover, a criminal investigation has been launched by the U.S. Department of Justice into the use of the banned pesticide at the resort.

According to the EPA, methyl bromide, an odorless fumigant, can be fatal or cause serious central nervous system and

respiratory damage.¹¹³

I bring this disturbing story to your attention to show you how environmental factors can have a serious impact on your health. Certainly, the immediate severity of the Esmond family's pesticide poisoning is more the exception than the rule. But what mainstream medicine misses the boat on is what I'm about to tell you next... pesticides can inflict major damage to your insulin... which is your master metabolic hormone. And what you just witnessed, in high doses, pesticides can be toxic.

Something I'm sure you're beginning to learn about me, and how I do things different from conventional medicine, is that I don't just ignore the problem or simply throw prescription drugs at serious health issues when I find them. In the case of pesticides (and other toxic chemicals you'll soon learn about in this chapter), we have the natural tools available to help protect you from serious health risks due to catastrophic damage to your vital master hormone.

Something as simple as a dietary change that no one bothers telling you about, goes a long way. I'll have more on this coming up... but first let's dig a bit deeper into environmental scenarios.

One thing is certain... we all live in different environments. Sure, some of us may live in the same country, state, or even local town or city. But the chances of our home environments being the same... or the environments where we vacation... or the chances of us eating the same foods... are remote, at best.

The bottom line: Chemicals in the air you breathe, the food you eat and unseen microorganisms in the environment can have profound effects on your overall health... and more specifically, can disrupt insulin and increase your risk of chronic disease.

A recent study conducted by University of Iowa microbiologists provided some shocking new issues on microorganisms and how a certain type can disrupt your all-important master hormone.¹¹⁴

The research team found that prolonged exposure to a toxin produced by *Staphylococcus aureus* (staph) bacteria triggered

the hallmark symptoms of type 2 diabetes – including insulin resistance, glucose intolerance and systemic inflammation.^{115,116} The team’s latest study showed how superantigens interact with fat cells and the immune system to cause inflammation and insulin resistance.¹¹⁷

As menacing as this is, this issue is only one of many environmental and chemical concerns we face that can attack insulin function. And what is even more concerning, is that many of these issues are hidden in the air we breathe, on items in our homes and in the food we eat. In this chapter I’ll show you how these issues can disrupt your vital master hormone and the steps you can take to avoid them.

Pesticides, Herbicides, Fungicides, Insecticides – Dodge These Hidden Toxins to Slash Your Risk of Serious Side Effects and Health Disruptions

When it comes to understanding the real dangers associated with pesticides, herbicides, fungicides and insecticides, there’s limited data available on long-term effects to average exposure and chronic disease. For some reason, many have glossed over these toxins as not dangerous, when often times the underlying factor is the lack of sufficient data.



But I feel these are real threats to your overall vitality and stability of insulin.

So, what DO we know about these toxins? What data is available?

We can start with this example – organophosphates and carbamates are the more common active ingredient of household, garden and farm insecticides. In high doses, they are highly toxic to all animals and humans. These compounds enter the body in any route: Whether through skin contact, inhalation or orally, it is nearly the same. When 54 children experienced acute exposure to organophosphate in South Africa, complications were quite severe. Even after 50 percent of them were “decontaminated” prior to arrival at the emergency room, many of the children suffered from...

- Shock – 9 percent.
- Heart arrhythmias – 9 percent.
- Coma – 31 percent.
- Seizures – 30 percent.
- Respiratory failure requiring ventilation – 35 percent.
- Death – 7 percent.

A prevalent environmental chemical cause of autoimmune hypersensitivity that goes undetected is 2,4-toluene diisocyanate. It is used as a chemical intermediate in the production of polyurethane products (quite prevalent in America) and is extremely toxic in acute exposures.

Another chemical toxin is dioxin. It is an unintentional by-product of chlorine waste incineration. Dioxin is extremely toxic to humans. It bioaccumulates the further up the food chain you go so that it is found in (in decreasing order):

- Beef
- Milk
- Chicken and pork
- Fish
- Eggs

Not surprisingly, dioxin levels in fish are 100,000 times that of the surrounding environment. An EPA report from September 1994 describes dioxin to be a serious public health threat. Some experts estimate it to be as much a threat as DDT was in the 1960s before it was banned.¹¹⁸

Shocking enough, more than 60 percent of the poundage of all agricultural herbicides and up to 90 percent of a typical pesticide product are capable of disrupting animal (and presumably human) endocrine and/or reproductive systems.¹¹⁹

Now you understand why I continue to bring attention to these environmental toxins as a growing health issue. Next up, I'll show you how they can directly raise havoc with your essential master hormone and what you can do about it.

Mimic “Blue Zoner’s” Diets to Reduce Pesticide Exposure and Protect Your Health

I uncovered some startling data on pesticides and insulin. Here's some of the background data behind the well-known Agricultural Health Study (AHS) that followed the health history of thousands of pesticide applicators and their spouses in North Carolina and Iowa:^{120,121}

- More than 89,000 people enrolled in the study between 1993 and 1997 including: 52,394 licensed private pesticide applicators (mostly farmers), 32,345 of their spouses and 4,916 commercial pesticide applicators from Iowa.
- Participants were free from diagnosed diabetes at enrollment time.
- Participants updated their medical records during a five-year follow-up interview (Phase II – 1999-2003).

Here are some of the AHS results I found pertaining to insulin as reported in scientific journals:

- **From the *American Journal of Epidemiology* (2008) –** After Phase II follow up interviews, 1,176 developed

diabetes. Researchers found seven specific pesticides (aldrin, chlordane, heptachlor, dichlorvos, trichlorfon, alachlor and cynazine) that increased the likelihood of diabetes. “Applicators who had used the organochlorine insecticides aldrin, chlordane and heptachlor more than 100 lifetime days, had 51 percent, 63 percent and 94 percent increased odds of diabetes, respectively.”¹²²

- **From *Occupational and Environmental Medicine* (2014) –** This study used data from the Agricultural Health Study (AHS) to analyze data of farmers’ wives (13,637) who reported ever personally mixing or applying pesticides at study enrollment (1993-1997) and who reported no previous diagnosis of diabetes. Results: “Five pesticides were positively associated with incident diabetes...” Authors concluded that “Results are consistent with previous studies reporting an association between specific organochlorines and diabetes and add to growing evidence that certain organophosphates also may increase risk.”¹²³

Pesticide Exposure Category	Number (%)		Adjusted Odds Ratio (95% CI)	
	GDM n=506	NoGDM n=10767		
None	233 (46)	4918 (46)	1.0	
Indirect	157 (31)	3724 (35)	0.9 (0.7-1.1)	
Residential	84 (17)	1820 (17)	1.0 (0.8-1.3)	
Agricultural	32 (6)	305 (3)	2.2 (1.5-3.3)	

Data from the review published in *Diabetes Care* shows that women whose activities during the first trimester of pregnancy involved agricultural exposures (mixing or applying pesticides or repairing pesticide-related equipment) had a twofold increased risk of developing gestational diabetes mellitus (GDM), ('Adjusted Odds Ratio' = 2.2 in above figure). No increased risk of GDM was observed in women with residential or indirect pesticide exposure during the first trimester of pregnancy. ('Adjusted Odds Ratios' 1.0 and 0.9 respectively).

■ **From *Diabetes Care* (2007)** – This review used data from the AHS to examine the association between pesticide use during pregnancy and gestational diabetes mellitus (GDM) among wives of licensed pesticide applicators. 506 women (4.5 percent) reported having had GDM. “Among women who reported agricultural exposure during pregnancy, risk of GDM was associated with ever-use of four herbicides (2,4,5-T; 2,4,5-TP; atrazine; or butylate) and three insecticides (diazinon, phorate or carbofuran).”¹²⁴ See figure on page 58 for more details.

As reported in the *American Journal of Epidemiology* on the study (page 58), among the 50 different pesticides the researchers looked at, they found seven specific ones (aldrin, chlordane, heptachlor, dichlorvos, trichlorfon, alachlor and cynazine) that increased the likelihood of diabetes among study participants who had ever been exposed to any of these pesticides, and an even greater risk as cumulative days of lifetime exposure increased. All seven pesticides are chlorinated compounds, including two herbicides, three organochlorine insecticides and two organophosphate pesticides.

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

The bottom line with what the Agricultural Health Study (AHS) revealed was that exposure to certain types of pesticides can imbalance your master hormone and even lead to diabetes. Now, you are already aware that diabetes is just the tip of the iceberg when it comes to chronic illnesses triggered by a dysfunctional insulin. To me, that’s one of the most concerning and frightening

factors with pesticide exposure risks.

So, what can you do to avoid pesticide exposure?

Well, first of all, I recommend you eat as much raw organic food as possible. This should help tremendously. Unlike non-organic produce, raw organic fruits and vegetables should not be exposed to dangerous pesticides and herbicides. Plus, toxic fertilizers are not supposed to be used in growing and cultivating these wholesome foods. Whether your produce is organic or not, I urge you to always wash the food prior to eating.

As far as “Blue Zoners,” author Dan Buettner in his book *The Blue Zones Solution* discovered that the little meat “Blue Zoners” consume comes from free-range animals and thus avoids risky pesticides, hormones and antibiotics typically found in feedlots. And when it comes to fruits and veggies, they’re either grown by the “Blue Zone” inhabitants or they find good, preferably organic, sources locally.¹²⁵

Now, I would be a bit naïve if I thought that this is all you have to do to avoid the pesticide risk. It’s definitely something I strongly recommend, but realize that not everyone may be able to afford, or even have access to, a wide array of organic foods like the “Blue Zoners.” It simply may not always be practical. And that’s why I also recommend a natural cleansing and detoxification program to help rid your body of these health-damaging toxins. I’ll have more on this coming up in a subsequent chapter.

Fend Off These Hidden Home Dangers for a Peaceful Night’s Rest

Now that you’re more aware of some of the environmental dangers posed by pesticides to your overall health (and specifically your body’s master hormone), let’s move inside your home and I’ll show you other potential hidden dangers.

If you’re getting eight hours of sleep every night, you could be spending 25 percent of your life sleeping in a bed full of dangerous toxins. You’re probably unaware that flame retardants used in most

common mattresses today subject you to a night of inhaling toxic chemicals. These toxic chemical have been linked to life-threatening health problems.

Behind all these flame retardants are Federal regulations (16 CFR § 1632 and 1633) administered by the U.S. Consumer Product Safety Commission (CPSC). These regulations require all mattresses sold in the U.S. to meet flammability standards. Sounds like a good thing, right?

Well, the problem with the regulations is fire retardant chemical companies have been allowed to spray their toxins on mattresses. This is the cheap way for mattress manufacturers to meet the regulations without spending more and doing it the safe way.

And it doesn't just stop with your mattress. A study at the University of New Hampshire uncovered that your exposure to compounds in the flame retardants added to couches, electronics and carpet padding can lead to liver and metabolic issues that cause insulin resistance. In other words, hidden toxins from flame retardants can mess with your "master metabolic mediator."¹²⁶

So what are the culprits behind all this? One of the most commonly used flame retardant chemicals is called polybrominated diphenyl ethers (PBDEs). Lab tests have demonstrated that PBDEs:

- Disrupt your metabolism.
- Increase your risk of an enlarged liver.
- Boost your risk of metabolic malfunctions.

The New Hampshire study uncovered how flame retardants make fat cells less responsive to insulin (your vital master hormone).¹²⁷ In turn, the drop in responsiveness creates blood sugar issues that can lead to diabetes and weight gain. And we know, once insulin becomes dysfunctional, a whole host of chronic conditions can be triggered.

The study researchers also believe that PBDEs may hamper the function of a liver enzyme that plays a part in processing sugar and fat. This increases the levels of fat in the blood and also adds to

insulin resistance that may increase the chances of obesity.

How big an issue is this flame retardant thing and what can you do about it to protect your all-important master hormone?

I can tell you that flame retardants are a really big issue that can be quickly summed up as follows.

- Flame retardant chemicals don't stay put in your mattress, sofa or other furniture.
- Toxins from the chemicals migrate out and collect in dust particles you breathe.
- Because of all this, it's estimated that 90 percent of all Americans have some level of flame retardant chemicals in their bodies. In California, long-term residents could have even higher levels because it was the first state to enact the retardant regulations.

This is no small issue by any stretch of the imagination. Plus, think about it, not only are you breathing these toxic dust particles, your family and children are as well. And probably the biggest concern is your mattress. You spend at least 25 percent of your life sleeping in your bed. More disturbing is that flame retardant chemicals can accumulate in breast milk and be transferred to your baby in utero. Research has shown that children born to mothers who were exposed to high levels of PBDEs during pregnancy had on average a stunning 4.5 point drop in their I.Q. and are more prone to hyperactivity disorders.

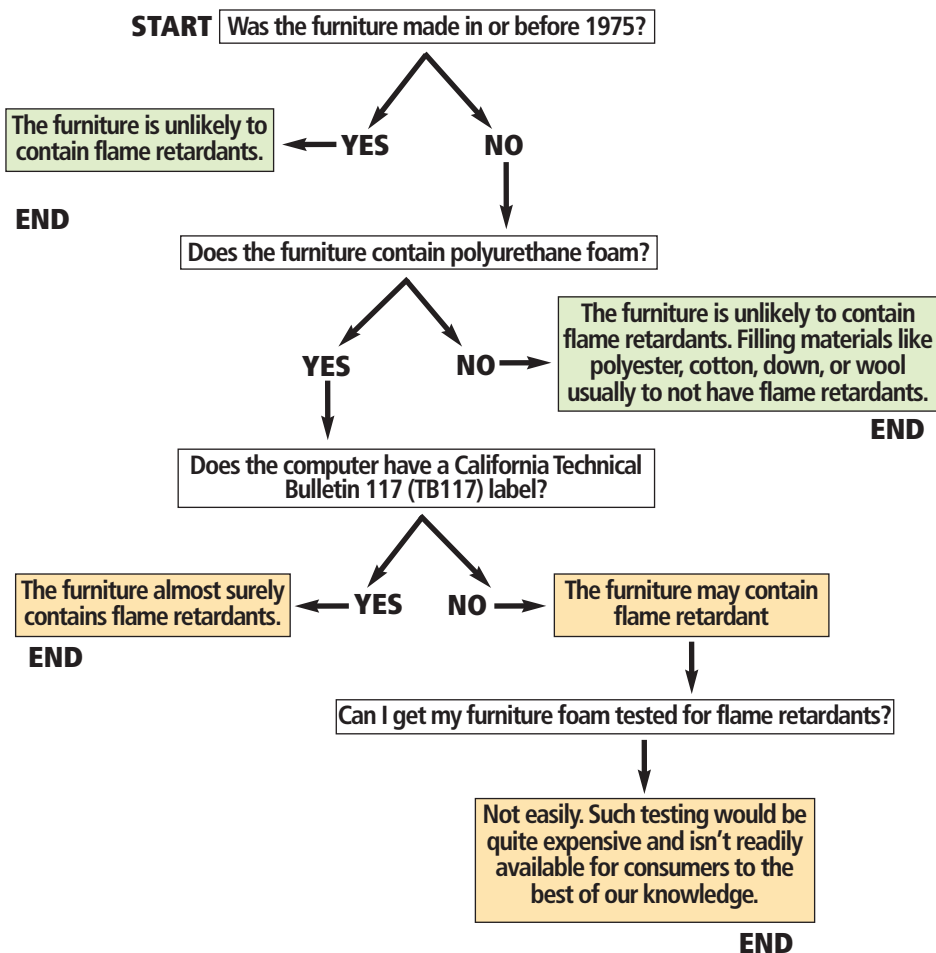
So, no mistake about it, the flame retardant issue is a big deal. The good news is that beginning in 2004, products using PBDEs were voluntarily removed from the market. The bad news is that many mattresses, sofas and other furniture made before 2004 could still be in your home.

With all this, the first recommendation I have is to examine your furniture, particularly your mattress. If your mattress was made prior to 2004, it would make sense to consider replacing it as soon as you can. If you need ideas of what type of furniture is naturally free of toxic chemicals to help protect insulin function and your overall health, here's a handy site to check out for suggestions:

<http://greensciencepolicy.org/topics/consumer-resources/>. This site comes with an excellent FAQ section that can answer many of your questions. I've also added a handy flowchart from this site (below) to use to start checking on your furniture.

My second recommendation is to take steps to boost your body's natural elimination of these and other chemicals. Like I said earlier, I'll have more coming up in a later section on how to do this.

Does My Furniture Contain Flame Retardants?



If any of your furniture contains flame retardants, your master hormone and overall health could be at risk. It's important that you take the necessary steps to remove any pieces (particularly, your mattress) as soon as possible.

10 Ways to Snub Plastic Packaging to Support a Vibrant Heart and High-Performance Liver

Now that you know some of the hidden dangers within your home that could impact insulin, I'd like to hone in on something that not only is becoming an environmental disaster, but can impact your overall health as well.

The use of plastic materials to package things like water and canned goods has been ongoing for years. It's estimated that about 1.5 million tons of plastic are used to manufacture water bottles each and every year. The production process alone releases dangerous toxic chemicals like nickel, ethylbenzene, ethylene oxide and benzene into the environment.

It's bad enough that these harmful toxins are released, but an even bigger issue has been gathering steam for years – approximately 1,500 water bottles are thrown away every second. The majority of these discarded water bottles are piling up in landfills. According to the Sierra Club, it takes up to 1,000 years for these bottles to decompose.¹²⁸

So, this is why plastic bottles are creating such a massive environmental crisis around the world. What about the containers themselves and your health?

Your health risk from drinking bottled water or eating foods packaged in plastic-lined cans is primarily the result of a troublesome chemical called bisphenol-A (BPA). BPA is used in plastic packaging materials (particularly water bottles and pre-made meals), cash register receipts and other common items.¹²⁹

Studies have shown how BPA can potentially increase your risk of...¹³⁰

- Severe metabolic effects (by mimicking a form of estrogen).
- Cardiovascular disease and liver disorders.
- Diabetes.

Now you know why I feel this is a serious health concern. I think one of the most disappointing issues with all this is the

FDA's approach to the BPA issue. According to the Environmental Working Group (EWG), the FDA has been unwilling to accept the massive body of evidence behind the health risks.¹³¹ Why is this, when in the past the FDA has taken some initiative to protect us from harmful food chemicals?

I believe the EWG hits the nail on the head by exposing the FDA's methodology behind studying chemicals for toxicity. The methods used by the FDA are based on finding the amount of chemical that will cause gross organ and tissue damages (or initiate cancer). Okay, this makes sense so far but there's more to it.

Here's a simplified version of the basic traditional process used by the FDA:¹³²

- Testing is done to find the amount of chemical that will cause gross organ and tissue damages (or initiate cancer).
- Researchers then work back to determine the supposedly non-toxic, non-poisonous amount of the chemical.
- Comparison is made between the supposedly non-toxic amounts and the chemical exposure levels within the food containers, etc.

On the face of it, this technique doesn't seem all that bad. But once I dug deeper and found that endocrine-disrupting chemicals (like BPA) at lower doses might even cause more potent effects than higher doses, all bets were off.

In 2009, the Endocrine Society's professional team revealed the following in their *Endocrine-Disrupting Chemicals* scientific publication as to these chemicals: "Even infinitesimally low levels of exposure – indeed, any level of exposure at all – may cause endocrine or reproductive abnormalities, particularly if exposure occurs during a critical developmental window. Surprisingly, low doses may even exert more potent effects than higher doses."¹³³

Yet, the FDA chooses to ignore all this and rely on old traditional scientific methods. As of this writing, the FDA is not budging on its position that BPA is not toxic at levels which humans are exposed to in everyday life.¹³⁴

Despite all this negative news, there are some initiatives I know of that have shown some movement outside the bounds of the FDA.^{135,136}

Under pressure from health advocates and state officials, baby products' manufacturers have stopped using BPA to make plastic baby products.

Some sports water producers (like Nalgene) have switched to other plastics that do not contain BPA.

In California, The Developmental and Reproductive Toxicant Identification Committee of the California Office of Environmental Health Hazard Assessment voted unanimously to add BPA to the state's Prop 65 list of toxic chemicals.

It's not all doom and gloom, but there still are plastic BPA-containing packages being sold out there. BPA can leach into your body and add to the dysfunction of your insulin... your body's master hormone. So, what are some things you can do?

First of all, it's important to realize that BPA is not the only problem here. Some savvy manufacturers who now truthfully state that their products are BPA-free, have simply switched to bisphenol-S (BPS) instead. Research has shown that BPS can disrupt your cellular function even in small concentrations. Chronic disorders like obesity, diabetes and cancer are the potential ramifications.

To avoid as much of this plastic packaging as possible which can raise havoc with insulin, here are the top 10 courses of action to take:

1. Only use glass bottles and dishware for your baby.
2. Give your baby natural fabric toys instead of those made of plastic.
3. Replace your plastic dishes and cups with glass varieties.
4. Store your food and beverages in glass containers.
5. When you microwave, use only glass containers, not plastic.
6. Replace any plastic coffee mugs with glass, ceramic or stainless steel.

7. Avoid using plastic wrap and never microwave anything covered in it.
8. Avoid using plastic kitchenware – at least replace old and scratched items.
9. Verify with your dentist that any dental sealant does not contain BPA.
10. Stay away from bottled water in plastic containers – bottle your own in glass containers using an in-house filtration system.

Now I realize some of these may take time for you to put in place. But I highly recommend you don't take this issue lightly and get started as soon as you can. Plus, I'll have more coming up on how to gently detox and cleanse your system to help remove unwanted chemicals.

FDA Unsure of 1,000s of Food Additives – Gain Peace-of-Mind and Cast Worries Aside When You Avoid Eating Processed Foods

In chapter 2, I discussed what I consider to be one of the worst hidden chemical additives found in many foods today, and that's high-fructose corn syrup (HFCS). Unfortunately, there are many more I want to alert you to that can disrupt your crucial master hormone and trigger chronic disease.

Before I get into specifics, I think it's important to understand how these toxic chemicals are getting into your food in the first place. Isn't the U.S. Food and Drug Administration (FDA) supposed to provide protection against unsafe additives? Unfortunately, there are some rather large loopholes in the FDA's additive approval process.

To me, it all starts with something called GRAS ("generally recognized as safe"). Sound a bit fuzzy to you? Well, you're spot on. For over 50 years, food manufacturers have not had to disclose information to the FDA and consumers about the safety of chemicals they add to your food.¹³⁷ You're probably

wondering – how in the world could that be?

The bottom line: Additive manufacturers have taken advantage of a flawed regulatory system that:¹³⁸

- Permits minimal or no disclosure at all.
- Is rampant with conflicts of interest.
- Provides lame oversight to something as important to your health as the food you eat every day.

This is where GRAS comes in the picture. Food companies can decide whether a chemical is “generally recognized as safe” on their own. They can hire inside researchers to evaluate the ingredient and, based on their interpretation of Federal safety standards, can declare it GRAS. A third party impartial evaluation is never required and the company does not have to inform the FDA that the ingredient is being used.

Estimates range as high as 1,000 chemicals that the FDA doesn’t know whether they are safe in your food or not.¹³⁹ This is pretty disturbing to say the least. How many of these chemicals are you consuming that potentially spike your insulin levels and put you at risk for all kinds of chronic conditions?

With all this concerning lack of protection, I can’t stress enough the importance of avoiding as many processed foods as you can. Most are loaded with chemical additives, some identified and some hidden from view. As far as your master hormone is concerned, I’ve identified three added chemicals that can be particularly disruptive. One I’ve already spent some time reviewing is HFCS. But let’s now take a closer look at HFCS and two others as well.

Why Satisfying Your Sweet Tooth with Natural Sugar Loaded with Whole-Food Micronutrients is the Smarter Way

In chapter 2, I already raised some issues with hidden sugars, specifically HFCS, and how it can disrupt insulin function. The

good news is that if you do have a “sweet tooth,” there are healthy natural substitutes for all the artificial sweeteners flooding the market.

As a general rule, the closer a sugar is to its original whole food, the better it will be for you. For example, fresh fruit is the best choice, followed by dried fruit (raisins, dates, figs, yacón), which is even sweeter yet still contains much more nutrition than refined sugars.

With fructose, there is some good news and some bad news. The good news is that fructose is the natural sugar found in plants, honey, fruits, flowers, berries and almost all root vegetables. By eating these foods, you can get fructose in its natural form along with an abundance of whole food micronutrients.

The bad news with fructose is that it also comes in a chemically refined variety, sold as a sweetener, and added to many foods you eat. This is where things start going south with chemical sugars like HFCS. HFCS contains fructose and glucose as single sugars (monosaccharides) and are found in nearly all regular soft drinks.

Before I get into a few more details on HFCS and why it’s clearly a chemical sweetener you want to avoid (due to its effects on your insulin), let’s take a short trip back in time.

Tainted History Behind High-Fructose Corn Syrup – A Sweet Deception Bad for Your Health

The question that begs to be asked (and one not too many people know about) with high-fructose corn syrup (HFCS) is where did it come from and why was it even created?

Well, the history is quite interesting and goes back over 30 years. Here are a few key points in the background and chronology behind the creation of HFCS:¹⁴⁰

- Until the 1970s, the majority of sugar came from sugar beets or sugar cane in the form of sucrose. Estimates range as high as

Number of current affirmative substances currently allowed in

Category and subcategory (human food only)	Estimated nr of affirmative decisions (% of total)	Estimated nr allowed (%)
Food additives	1275 (21%)	5292
Direct food additives	230 (4%)	1483
Indirect food additives	171 (3%)	3007
Substances covered by food contact substance (FCS) notifications	773 (13%)	701
FCSs below threshold of regulation	101 (1.6%)	101
"Generally recognized as safe" (GRAS) substances	4284 (69%)	4646
Manufacturer self-determined	1000 (16%)	1000
Association expert panel-determined (flavors and extracts only)	2702 (44%)	2702
FDA-listed	85 (1.4%)	437
FDA-affirmed	230 (4%)	270
Substances covered by FDA-reviewed GRAS notifications	267 (4%)	237
Prior-sanctioned substances	12 (0.2%)	120
Color additives	52 (0.8%)	148
Pesticide chemicals or residues	581 (9%)	581
Overall total	6204 (100%)	10787

Based on the author's discussion with manufacturers and their consultants, as many they can spike your insulin levels or are even generally safe or not.

safety decisions and number of human food as of January 11, 2011.

of substances of total)	Estimation method ^a	If decision is published, where is it published?
(49%)		
(14%)	CFR Sections	21 CFR Parts 172, 173, 180, and 189
(28%)	CFR Sections	21 CFR Parts 174 to 178
(7%)	Notifications to FDA	FDA publishes its decision but not the manufacturer notification on its website
(0.9%)	Notifications to FDA	FDA publishes its decision but not the manufacturer notification on its website
(43%)		
(9%)	Authors Estimate ^b	Not published
(25%)	FEMA Reports ^c	Panel publishes periodically in <i>Food Technology Magazine</i> ^d
(4%)	CFR Sections	21 CFR Part 182
(3%)	CFR Sections	21 CFR Part 184
(2%)	Notifications to FDA	FDA publishes its decision but not the manufacturer notification on its website
(1.1%)	CFR Sections	FDA lists known decisions at 21 CFR Part 181
(1.4%)	CFR Sections	21 CFR Parts 70 to 82
(5%)	CFR Sections	EPA posts at 40 CFR Part 180
(100%)		

as 1,000 substances are added to your food without the FDA knowing whether

Continued from page 69.

83 percent of sugar was consumed from these sources.

- High-fructose corn syrup (HFCS) was invented in 1957 by two researchers – Marshall and Kooi.
- Strangely enough, there is no natural fructose in corn syrup. Instead it contains glucose, a sugar molecule less sweet than fructose.
- Marshall and Kooi developed an enzyme (glucose isomerase) that rearranged the molecular structure of the glucose in corn syrup and converted it to fructose. The more glucose converted to fructose in the corn syrup, the sweeter it became.
- Since American corn refiners were under Federal subsidies and the subsequent excess supply of corn, this development was a windfall for them.
- The cost savings to corn refiners was significant with high-fructose corn syrup. Far less corn syrup was needed to make the HFCS sweet.
- By the 1970s, HFCS was being produced on an industry-wide scale and rapidly took over a large portion of the sweetener market.
- By 1997 (based on a USDA report), HFCS accounted for about 56 percent of consumed sugar, while sucrose declined to only about 43 percent – a huge drop from its 83 percent consumption level back in the 70s.
- Due to the huge corn lobby in America, the government was convinced to set import quotas and tariffs on sugar cane. As a result, at one point, it was actually less expensive to produce HFCS than to buy beet or cane sugar.

So, what started out as a way to chemically make corn syrup sweeter became a cheaper way to flood the market with a dangerous artificial sweetener in the form of HFCS.

Throw Those Soft Drinks in the Trash to Stay Slim and Prevent a “Fatty” Heart

HFCS can be found in soft drinks (mostly the non-diet kind) and other health-adverse processed foods. A study at the University of Bristol, England, demonstrated how HFCS warps the way your fat cells mature.¹⁴¹

Due to this “warping,” more of these cells grow into inflammatory fat cells in your body fat. This in turn endangers your heart and makes the fat become insulin resistant – raising havoc with your vital master hormone. And this doesn’t just apply to adults. In fact, these characteristics can be more problematic for children who have more fat cells that are maturing.

It’s been known for some time that abdominal obesity (that unsightly fat around your middle section) significantly increases your risks of cardiovascular disease and type 2 diabetes. Although scientists previously demonstrated the damaging influence of fructose on the body fat of lab animals, the “Bristol” study confirms how it harms the fat in humans.

A study conducted at the University of California, Davis, in 2009 showed how consuming large amounts of fructose (in this case fructose-sweetened beverages) could impact your health. Researchers found that this type of consumption, in only 10 weeks, can cause you to build new fat cells around your heart, liver and digestive organs – leading to higher risks of diabetes and heart disease. In this study, high-fructose consumption was compared to one of high glucose sugar intake which did not have the same effects.¹⁴²



Glucose is the form of energy your body was designed to run on. Every cell in your body uses glucose for energy and it is the basic carbohydrate energy source for all living cells. Fructose is not the same energy molecule as glucose. But if you consume only natural fructose from fruits and vegetables, you'd not only consume a moderate amount of fructose per day, but the fruits and veggies are mixed in with natural fiber, vitamins, minerals, enzymes and beneficial phytonutrients – all which help moderate any negative metabolic effects.

The bottom line here is that natural fructose in of itself is not a bad thing. The problem is that in today's sugary soft drinks and loaded-up processed foods people consume, you get massive doses of fructose in the form of HFCS. And these can trigger insulin secretion to go into a tailspin and raise havoc with your overall health. In my family practice, I don't pull any punches in strongly advising patients to steer clear of soft drinks and processed foods.

Push Aside HFCS to Keep Your Master Hormone Running on All Cylinders and Thwart Chronic Disease

As Americans have become more and more health conscience and looked beyond the FDA and other government sources to avoid “bad” foods, the manufacturers of HFCS have become even more underhanded.

While it is true that some food producers have taken the right approach and eliminated HFCS from their products (and labeled them as such), others have taken a devious and misleading approach by labeling HFCS as something else. A perfect example is General Mills®.¹⁴³

General Mills® claims its popular Chex™ cereal does not contain HFCS. But what they've done is update the cereal with vanilla flavoring. And yet, an ingredient in the cereal is listed as “isolated fructose.”

Here's the skinny on "isolated fructose"...

- It's simply a name change for a previous product called HFCS-90.
- HFCS-90 means 90 percent fructose.
- Even the Corn Refiners Association states that HFCS-90 is used in natural and "light" foods where little is needed to provide sweetness.

"Isolated fructose" is simply a name change for HFCS-90. And this is just the tip of the iceberg as there are other names now used to disguise this health-adverse sweetener. As a synthetic sugar, HFCS bypasses your pancreas. This can eventually lead to serious issues by causing insulin to malfunction and trigger the onset of diabetes (not to mention other chronic diseases and conditions).

The sad thing is, as of this writing, the FDA approves the use of HFCS. Hard to believe they're looking out for your health on this one.

So, what can you do to avoid HFCS and better protect your health?

Stay Away from These HFCS-Laced Foods for Your Best Health Checkup Ever

High-fructose corn syrup (HFCS) is routinely used in many different foods... most of them processed foods. And not all of these processed foods may list HFCS even if it's there. By avoiding as much processed foods as you can, you will help protect your health and keep your insulin from going haywire.

Here are some additional recommendations I have on HFCS, what to look for, and foods to eat:¹⁴⁴

- Soft drinks (sodas) are number one on my list to avoid. They are loaded with HFCS. You won't catch "Blue Zoners" drinking soft drinks. Their beverages of choice include water, teas and wine.

- Most commercial fruit juices contain HFCS. Best to avoid these and eat whole fruit instead.
- Take the time to carefully examine food labels when you're in the store. HFCS and other chemical sweeteners can be well disguised. Here are just a few of the ingredients to watch out for: "High-fructose corn syrup," "isolated fructose," "iso glucose," "glucose-fructose syrup," "fructose syrup," "dahlia syrup," "tapioca syrup," "glucose syrup," "corn syrup," "crystalline fructose" or "fruit fructose."
- Many common foods like ketchups, baked goods, crackers, chicken broth, stuffing mixes, breakfast cereals and salad dressings contain HFCS. Avoid as many of these that contain HFCS as possible.
- Follow the "Blue Zoner's" lead and eat plenty of fresh, green leafy vegetables (preferably organic) as possible. These veggies are rich in B vitamins which can help detox your system, metabolize sugar you've consumed, and help stabilize your energy production.

So, it's real important to avoid as many foods and beverages containing HFCS as possible. I'll have more on my recommendations coming up for safe sweeteners. But first I want to alert you to another chemical sweetener... one I consider even worse than HFCS.

Safeguard Your Health by Ignoring FDA and ADA Approval of this "Formaldehyde" Sweetener

Ever wonder what gives most diet sodas that sweet zero-calorie taste? Well, in the majority of cases it's a chemical sweetener called Aspartame.

In my opinion, Aspartame is even nastier than HFCS. Brand names for Aspartame include NutraSweet® and Equal®. Aspartame is the most prevalent artificial sweetener out there and is fraught with serious health risks. And shockingly, Aspartame is considered

a neurotoxin – a chemical compound created in a lab that breaks down into formaldehyde. Yes, I said “formaldehyde.” Isn’t that unbelievable?

Once Aspartame breaks down into formaldehyde in your body, it then oxidizes into formic acid – the main chemical weapon ants secrete to protect themselves. Yikes!

Who wants this neurotoxin anywhere near their body? I know I don’t.

And I’m only getting started on what I know about this toxin. According to some analysts, 75 percent of adverse reactions to food additives reported to the FDA are attributed to Aspartame. As of this writing, both the American Diabetic Association (ADA) and the FDA support the use of Aspartame. What could they be possibly thinking?

In addition to diet sodas, Aspartame can be found in breath mints, gum, cereals, frozen desserts, coffee, juice, synthetic vitamins, pharmaceutical drugs, tea, wine coolers and yogurt. But by far, diet soft drinks are where it’s predominantly found.

Defend Your Eyesight, Hearing, Taste Buds and More When You Steer Clear of Foods Harboring this Common Neurotoxin

A large majority of the 90 adverse reactions and side effects linked to Aspartame include:

- Headaches and migraines.
- Dizziness and nausea.
- Numbness and rashes.
- Seizures and depression.
- Irritability and insomnia.
- Hearing loss and loss of taste.
- Vision problems, vertigo and memory loss.

There have been numerous studies conducted on Aspartame. Back in 1996, a doctor, Ralph G. Walton, M.D., then chairman at the Center for Behavioral Medicine and Professor of Clinical Psychiatry at Northeastern Ohio University College of Medicine, analyzed 164 Aspartame-related studies from a Medline search. Of the studies, 83 (92 percent) identified one or more issues with Aspartame. Of the seven remaining studies which did not find a problem, six were conducted by the FDA.

But some of these side effects pale in comparison to what it can do to your insulin levels:

- As reported in the *European Journal of Nutrition* (2014), a seven-year study using more than 2,000 Japanese men clearly showed that diet soda drinkers had a significantly higher incidence of diabetes when compared to the controls.¹⁴⁵
- French researchers reported that after 14 years observing 66,188 women, they found that even at equal consumption rates, women who consumed diet soda had more new cases of diabetes than regular soda drinkers.¹⁴⁶

I've been saying for some time now that Aspartame is just a nasty chemical sweetener and should be avoided in all cases. Keep in mind that when your body's master hormone becomes dysfunctional, you know by now that diabetes is only one of the health risks you could face. You open yourself up to a multitude of chronic illnesses. Plain and simple – just don't consume anything with this nasty neurotoxin.

The FDA and ADA continue to turn a blind eye to its ever-growing list of health risks. Why are they ignoring all the obvious signs of trouble here? Here's some history on Aspartame and the eye-opening reality...

Shocking Cover-Up the FDA Doesn't Want You to Know About

The chronology of the cover-up by Searle Pharmaceuticals and the FDA which led to acceptable widespread use of Aspartame is outlined in this chart (taken from Mary Nash Stoddard's book, *The Deadly Deception*):

Year	Events
1969	Dr. Harry Waisman fed Aspartame mixed with milk to monkeys. One died after 300 days of Aspartame and five others had grand mal seizures. Searle deleted this study when the company submitted safety evidence to the FDA.
1970	The FDA banned cyclamate during the time that the safety of saccharin was being questioned. The time seemed ripe for Aspartame.
1971	Dr. John Olney, a research psychiatrist, told Searle that aspartic acid caused "holes in the brains of mice."
1974	Searle people said these studies raised "no health problems." Searle told the FDA about these findings after approval was granted.
1975	Many of the test animals fed Aspartame developed large tumors. These were not reported to the FDA.
1977	Despite the many complaints about Aspartame, William Conlon and Thomas Sullivan, two U.S. attorneys, took no action; in five years the statute of limitations for a grand jury investigation expired. A year later Conlon took a position with the law firm that represents Searle.
1980	A Public Board of Inquiry of three scientists was activated. These (two M.D.s and one Ph.D.) voted to ban Aspartame. Because of those negative findings a five member Commissioner's Team of Scientists was impaneled: Three voted to ban; two voted it was safe. Another member was added: Jacqueline Verrett, Ph.D., toxicologist on the team said, "Bureau officials were working up to a whitewash. Safety questions remain unanswered."
1981	Dr. Arthur Hull Hayes, Jr. was appointed the new FDA Commissioner and overruled the Public Board of Inquiry's recommended ban of Aspartame. He said his approval was part of the Reagan administration's new reform.
1983	The National Soft Drink Association wrote to the FDA that Aspartame was breaking down in warm climates. But the Association later accepted Aspartame. Dr. Hayes office approved the use of Aspartame in soft drinks just two months before he quit his job as FDA chief. He then obtained a job with a public relations firm who represents NutraSweet®.

1984 Seven million pounds of NutraSweet® are reportedly consumed by about 100,000 people nationally.

1985 Reports of side effects mount.

This is pretty irresponsible when the health of people worldwide can be put at risk by consuming this risky chemical sweetener. And the chart only shows events through 1985. Since that time, the number of side effects and adverse health effects have continue to mount. My advice is to avoid products containing Aspartame at all costs. Diet soft drinks are the biggest culprits and avoiding them alone will give your health a boost and protect your insulin like I stress to all my patients.

Choose from these Healthier Sweeteners to Help Keep Your Insulin Sensitivity in the Safe Zone

How sugar and sweeteners affect your master hormone can be defined by their glycemic response. High-glycemic chemical sweeteners like HFCS and Aspartame lead to elevated insulin levels.

Research has shown that Aspartame can worsen your insulin sensitivity to a greater degree than plain old sugar.¹⁴⁷

Here's a list of what I consider healthier sweeteners that won't cause your essential master hormone to go haywire:

- **Organic unsulphured black strap molasses** – Is made from mature sugar cane and is closest to the natural food.
- **Raw honey** – Has some great health benefits, and is low in free fructose and high in trace minerals. Many centenarians in “Blue Zones” use honey as their go-to sweetener for teas.
- **Grade B maple syrup (unrefined)** – Comes from maple tree sap and contains some vitamins and minerals.
- **Whole natural brown sugars** – Contains molasses – the more molasses content the more nutrients you'll get. Good

examples include: Sucanet, muscovado, turbinado and rapidura.

- **Coconut sugar** – Comes from the boiled down sap of flower buds cut from coconut palms and has a low glycemic index (35).
- **Sugar alcohols** – Is nearly zero calories, has no effect on blood sugar, causes no tooth decay, goes well in baking and only is partially absorbed by your body. Brand examples include: ZSweet®, Sweet Simplicity® and Zero.
- **Tagatose (Presweet)** – Is a safe natural sweetener from fruits, cacao and dairy products, with a very low glycemic index of just 3.
- **Agave nectar** – Has a glycemic index less than one-third of honey (volcanic agave nectar compared to honey).
- **Stevia** – Comes from a virtually calorie-free herb yet is 200 times sweeter than sugar. Stevia has been shown to have beneficial effects on obesity, the immune system, and blood pressure.

If you're looking for a safe sweetener to put in herbal teas, plain yogurt, fruit smoothies and hot whole grain cereal, I highly recommend stevia. It won't trash your insulin levels and in many cases is even suitable for diabetics.

The healthiest sugars are still found in whole foods like natural fruits and vegetables. But if you need a sweetener that won't totally disrupt insulin you can use the list above as your guide.

Consumer Alert: Despite Reduced Consumption and FDA Warnings, this “Bad” Fat is Still Out There

As far as hidden ingredients in your food, one that is still very concerning is trans fat. I say “still” concerning because despite our efforts to cut back on this, it's still around and causing health issues.

As reported in the *Journal of the American Heart Association* (2014), a study at the University of Minnesota School of Public Health in Minneapolis showed that we are indeed eating less trans fats than we did 30 years ago... but we're still eating too much.¹⁴⁸

In fact, for health reasons, the FDA has published warnings on its own site to avoid trans fats and even lists foods that may still contain this bad fat.¹⁴⁹ So, it makes absolutely no sense in my book why you would even consider eating anything loaded with this fat. Why all the fuss?

Stay Well Away from this “Bad Boy” to Protect Your “Mediator” and Slash Your Risk of Diabetes, Cancer and Heart Disease

During food processing, trans fat is created when hydrogen is added to vegetable oil to make it more solid. This process, known as hydrogenation, helps make fats less likely to spoil. In the end, this process helps foods appear to remain fresh longer, expands their shelf life and improves their texture (less greasy feel).¹⁵⁰

For good reason, trans fats have been called the unhealthiest fats. Trans fat consumption can disrupt insulin and studies have linked this fat to serious health issues like:¹⁵¹

- **Diabetes** – disrupts the insulin receptors in your cell membranes.
- **Cancer** – interferes with enzymes your body needs to fight cancer.
- **Immune function** – reduces your immune response.
- **Reproduction issues** – interferes with enzymes needed to produce sex hormones.
- **Heart disease** – causes major clogging of your arteries.

Other added health risks from eating foods with trans fats include asthma... obesity... Alzheimer’s... and behavioral issues.¹⁵²

This “bad boy” fat can disrupt your master hormone at its cellular level. And despite even a heads up from the FDA, some foods still contain trans fat. As of this writing, the FDA is expected any day to issue a near ban on these fats.¹⁵³ But those are the key words: “near ban.” Certain foods may still have the fat if it falls below a certain

level. Even today, certain foods that have less than 0.5 grams of trans fat per serving can claim zero trans fat on their labels.

Eat Foods Loaded with Natural Fats to Look and Feel Your Best

Until this all gets sorted out, I recommend you avoid any foods that contain partially hydrogenated oils even if they're labeled as "Trans Fat 0g". At the same time, avoid any of the following foods to better protect your health and insulin from the ill effects of trans fats.¹⁵⁴

- Snack foods like potato chips, tortilla chips and microwave popcorn.
- Baked foods made with shortening like cookies, cakes and pie crusts.
- Deep fried foods like donuts, french fries and fried chicken.
- Non-dairy coffee creamers.
- Dough that is sold refrigerated such as cinnamon rolls and pizza crusts.
- Ready-to-use frosting.
- Vegetable shortenings and stick margarines.

In addition to avoiding these foods as much as possible to limit your potential trans fat intake, here are some foods that have healthy natural fats, many of which folks living in "Blue Zones" thrive on:

- Olives and olive oil.
- Raw nuts such as almonds and pecans.
- Grass-fed meats.
- Coconuts and coconut oil.
- Organic pastured egg yolks.
- Unprocessed palm oil.
- Butter made from raw grass-fed organic milk.
- Avocados.
- Unheated organic nut oils.

It's better to be safe than sorry until we know for sure that trans fats have been totally banned and removed from all foods. But we need to keep our eyes wide open, as many times savvy food manufacturers replace one bad ingredient with something even worse.

When it comes to eating healthy foods with healthy fats and free from trans fats, I also recommend you steer clear of food from animals raised in what has been called CAFOs (confined animal feeding operations). These animals are not only often treated badly in crowded and unsanitary conditions, many have their food spiked with antibiotics. This also applies to farm-raised salmon where antibiotics and risky dyes are often used.

I'm convinced that the overuse of, and flooding of our bodies with antibiotics lowers your resistance to bacteria that can disrupt how insulin works. A perfect example is the University of Iowa study I brought to your attention earlier in this chapter. The research team revealed how exposure to staph bacteria could cause inflammation and insulin resistance.¹⁵⁵

When it comes to animal foods, here are healthier choices I recommend to better protect your insulin... your all-important master hormone:

- Grass-fed beef
- Free range chicken
- Wild caught salmon

The key here is to have an open dialogue with your butcher and carefully read labels to avoid animals raised in confinement and force-fed foods laced with antibiotics.

Nurture Your Master Hormone for an Active and Disease-Free Life

In this chapter, you learned about certain chemicals found in your environment, home and food that could cripple insulin function and disrupt this master hormone's ability to keep the body healthy. I showed you the importance of avoiding these

risky chemicals and how some healthier alternatives could better protect this crucial master hormone.

I cannot stress enough how vital it is to nurture proper insulin levels. To me, this master hormone is your key to a healthy and active life. It's really quite simple – take care of insulin function and avoid all chronic conditions. It's why I've been able to help so many patients in my family practice... it's the underlying secret behind the centenarians... it's why those living in "Blue Zones" avoid the grips of chronic disease so well.

In an upcoming chapter, I'll introduce you to ways you can rid yourself of chemicals that may have already lodged themselves in your body, and how this will help repair and balance your vital master hormone.

CHAPTER 4

Regain Insulin Sensitivity and Conquer All Disease

Our Greek friend, Stamatis Moraitis, continued to enjoy his active life on Ikaria until February 2013... when he eventually did float off into the Aegean breeze.

Not only did Stamatis outlive his U.S. doctors who predicted his imminent demise back in 1970 after a terminal lung cancer diagnosis, he had refused the chemotherapy and medicines they had prescribed.¹⁵⁶

Stamatis passed away peacefully on his beloved island almost 40 years after the original diagnosis... and he did *not* die from cancer.

By now, you're already aware of the kind of natural "therapy" Stamatis experienced after returning to his Greek island home. But is there more to learn here about preventing and surviving cancer by taking care of insulin function like our Greek Grampa Stamatis did?

I promise you... that is the crystal clear case...

Fix Your Master Hormone... Fix Cancer

From chapter 1, I told you about the startling mortality statistics on cancer. Along with heart disease, these two chronic illnesses account for nearly 48 percent of all deaths annually in the U.S.¹⁵⁷

Also in the chapter, I introduced you to the link between breast cancer and high insulin. And excessive insulin was not only an overall factor in breast cancer, but also a potential growth factor in existing breast tumors.

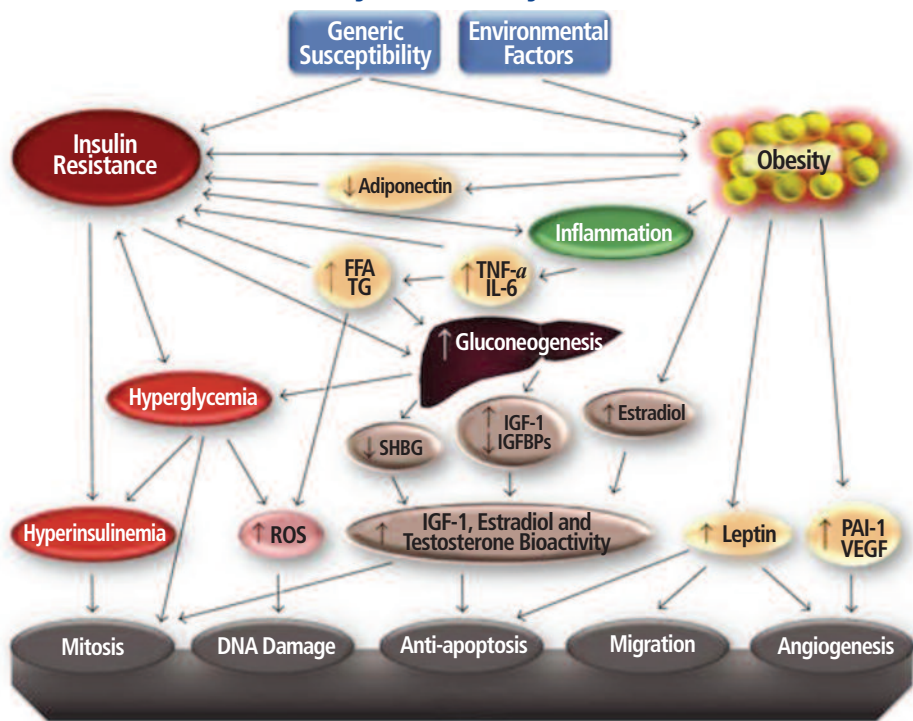
But I'm now here to tell you that the connection between your body's master hormone and breast cancer is only the tip of the iceberg. Unfortunately, many other forms of cancer share the same link – I truly feel mainstream medicine has missed the boat on this serious health connection.

The form of cancer that Stamatis was diagnosed with four decades ago, lung cancer, shares such a possible link. Research has shown that insulin resistance may be an important risk factor for lung cancer.¹⁵⁸ With what we learned about Stamatis, this does not surprise me at all. But this is only one example of your master hormone/cancer connection.

Here are other excellent examples I've uncovered of well-documented links between an out-of-control master hormone and cancer (see chart on the next page for graphic depiction):

- As reported in *Experimental Diabetes Research* – Excess weight gain associated with hyperinsulinemia (excess insulin), insulin resistance and dyslipidemia (excess lipids in the blood) can be major risk factors in certain types of cancer, including colon and breast.¹⁵⁹
- Also revealed in *Experimental Diabetes Research* – Individuals with high levels of circulating insulin-like growth factor (IGF-I) have an increased risk of developing certain types of tumors, in particular, breast and prostate.¹⁶⁰
- As published in *The American Journal of Pathology* – Increased fasting insulin levels (in non-diabetic patients) are independently linked to the development of colorectal, breast, uterine and prostate cancers.¹⁶¹
- As uncovered in *Endocrine Related Cancer* – Studies clearly show an increase in cancer among diabetic patients including: Pancreatic, liver, breast, colorectal, urinary tract and female reproductive organs.¹⁶²
- As reported in *Metabolism* – Insulin was found to be a potential risk factor for lung cancer.¹⁶³

The Many Pathways to Cancer



A multidimensional model of cancer development...

What do all these powerful examples tell us? Well, it should be as clear to you as it is to me... dysfunctional insulin increases your risk of many different types of cancer... not just breast cancer.

So, what can you do to prevent your all-important master hormone from spiking your insulin levels and increasing your risk of all types of cancer? Well, from earlier chapters, you already know about some very important steps to take to keep it under control. But there is something else... particularly with cancer.

Learn How to Control These Silent Killers to Boost Your Immune System and Snuff Out Cancer

While there's not just a single cause of cancer, several factors including smoking... exposure to radiation... certain viruses...

genetics... and others... influence the growth and spread of this menacing illness.

But to fully understand cancer, you have to take into account one of its hidden triggers: Free radicals.

Free radicals are atoms or molecules with an odd (unpaired) number of electrons. Let's take the helium atom for example. The helium atom has two electrons circling around the center, and its center is made up of two protons and two neutrons. If one of those electrons "goes away," the remaining electron no longer has a mate.

What we now have is an electrically charged free radical. Once formed, these highly reactive radicals can start a chain reaction... a domino effect.

In your body, if free radicals do indeed react with the DNA in a cell and the cell can't repair its DNA fast enough, then it becomes programmed to function poorly, die or start a new cell line we call cancer.

But where exactly do free radicals come from? Your body constantly generates them during cellular respiration (where oxidative energy is generated) and by immune system cell activity. Free radical molecules are also produced from ultra-violet radiation, cigarette smoke, car exhaust, heavy metals, trans-fatty acids, chemicals used to process foods (nitrosamines), preservatives and dyes – even charcoal from barbecued foods.

Destructively, free radicals eat away at healthy cells and turn them defective. As a result, over a period of time, these "silent killers" can:

- Destroy cell membranes.
- Cause DNA mutation and genetic damage.
- Weaken the immune system.
- Accelerate the natural aging process.
- Turn cholesterol into sticky plaque that clogs arteries.
- Oxidize LDL cholesterol – which can lead to atherosclerosis,

hormone dysfunction – and even diabetes.

So, what's the connection, if any, between free radicals and insulin?

I'll get to that in just a minute but I think by understanding and giving attention to the underlying mechanisms that promote the growth of cancer, you'll be in the best position to prevent it. And even if you already have cancer, examining these causes will give you a better understanding of how to treat your disease without dangerous chemotherapeutic agents, toxic radiation or invasive surgery alone.

Okay, so here's where your body's master hormone comes into play with free radicals. When you eat too many sugary foods, in particular foods with refined sugars and those with a high glycemic index (GI), this can lead to weight gain and a spike in your insulin levels. But it does something else as well... Excess sugar can trigger the release of free radicals and cause oxidative stress. And refined sugar can also weaken your immune system and lower your defenses against infection and disease.¹⁶⁴

So not only keeping your sugar consumption (and the type of sugar you consume) in check helps protect your vital master hormone, it helps prevent the excessive production of free radicals. As you just learned, out-of-control insulin and excessive free radicals on the loose can destroy healthy cells and lead to cancer.

The best way to prevent this is to avoid eating excessive sugar, and in particular "bad" refined sugar. Plus, eat wholesome amounts of preferably organic fruits and vegetables to load your system up with antioxidant power to keep those pesky free radicals under control, ensure your body's master hormone is running on all cylinders and give your immune system the boost it needs. I also recommend that you eat at least half of your food raw (like veggies, fruits and nuts)... and by all means if you smoke, take measures to beat this risky habit as soon as possible.

Unfortunately, mainstream medicine often focuses in on only using toxic drugs to deal with cancer...

Stay Ahead of the “Cancer Game” by Stomping on Big Pharma’s Playbook

You may not be fully aware of this, but approximately 2.2 million U.S. hospitalized patients have adverse drug reactions (ADRs) to prescribed medications every year. And adverse drug reactions cause injuries or death in one of five hospital patients. Iatrogenic deaths, or deaths by medical treatment, might just be the leading cause of death in the U.S.

And for those not hospitalized, adverse drug events are estimated to be the cause of more than 700,000 emergency room visits each year.

Nearly all of us, at one time or another, have needed or currently use prescription drugs. They have their purpose, yet interfacing these synthetic drugs with a holistic health approach can be a challenge.

That’s because while these unnatural chemicals cause short-term effects, they invariably cause adverse effects too, most of which go undetected and unreported... most of which the pharma giants don’t want you to know about. Moreover, the known adverse health risks of drugs are typically not even shared with patients.

It is extremely important for you to know the risks and adverse effects of any medication you take... especially those you take chronically. Drug adverse health risks vary widely from chemotherapy (poison in my view) to intermittent Tylenol® (proven safe even for pregnant women).

Since we’re talking about cancer risks, I think it’s important for you to know about certain drugs that can spike your insulin levels. This is obviously important for you to know not only to protect your vital master hormone and help prevent cancer, but to shield yourself from all chronic illnesses as well.

Staying ahead of the “cancer game” and any chronic disease by being proactive with preventative measures is what you should be doing... don’t wait until you have symptoms to take action. By

then, the underlying disease is long underway and you'll be subject to more pressure to take drugs and agree to radical surgeries.

I'm a perfect example of what I'm talking about here...

At the age of 33, I was diagnosed with ulcerative colitis which caused me to get a total proctocolectomy. By the time I was told my colon needed to be completely removed through this drastic surgery, it was too late for natural and holistic approaches to be effective.

To me, the same applies to prescription drugs... living a healthy lifestyle that includes wholesome preferably organic foods and regular exercise can help prevent out-of-control insulin production which can lead to chronic illnesses like cancer and a life spent taking risky drugs.

Here's more on examples of drugs to watch out for and why...

Supercharge Your Insulin to Wipeout Your Risk of Cancer and Chronic Disease Forever

Now that I've alerted you to the fact that Big Pharma could care less about the magnitude of adverse side effects their chemical cocktails continue to trigger, the chart on the next page specifically shows some of the drugs I discovered that could cause hyperglycemia (high blood sugar). Hyperglycemia occurs when there's no insulin in your blood, not enough insulin or the insulin that's there is not working properly.¹⁶⁵ In other words, this condition exacerbated by these prescription drugs, can raise havoc with the critical function of your master hormone... which can increase your risk of chronic disease like cancer.

If you're currently taking any of these drugs, you're probably not being told about how they could cause adverse side effects and chronic illness. My recommendation is that you need to do your research and talk to your doctor about determining ways to naturally get off any of these drugs. I've always favored the holistic approach but in the case of prescription drugs, this

restorative/functional focus must be carefully integrated with science proven by conventional medicine.

Since the number of prescription drugs I found that can cause hyperglycemia is rather lengthy, I've just included part of the first page (drugs "A" – "C") here as an example. I recommend you check out other sources and go to this site: www.diabetesincontrol.com for the complete list that is probably being constantly updated as more drugs are released:¹⁶⁶

Drugs that Can Cause Hyperglycemia (High Blood Sugar)

Abacavir (Ziagen®)

Abacavir + lamivudine, zidovudine (Trizivir®)

Acetazolamide (Diamox®)

Acitretin (Soriatane®)

Albuterol (Ventolin®, Proventil®)

Albuterol + ipratropium (Combivent®)

Ammonium chloride

Amphotericin B (Amphocin®, Fungizone®)

Amphotericin B lipid formulations IV (Abelcet®)

Amprenavir (Agenerase®)

Anidulafungin (Eraxis®)

Aripiprazole (Abilify®)

Arsenic trioxide (Trisenox®)

Asparaginase (Elspar®)

Atazanavir (Reyataz®)

Atenolol + chlorthalidone (Tenoretic®)

Atorvastatin (Lipitor®)

Atovaquone (Mepron®)

Baclofen (Lioresal®)

Benazepril + hydrochlorothiazide (Lotension®)

Betamethasone topical (Alphatrex®, Betatrex®, Beta-Val®, Diprolene®, Diprolene® AF, Diprolene® Lotion, Luxiq®, Maxivate®)

Betamethasone + clotrimazole (Lotrisone® topical)

Betaxolol Betoptic® eyedrops, (Kerlone® oral)

Bexarotene (Targretin®)

Bicalutamide (Casodex®)

Bisoprolol + hydrochlorothiazide (Ziac®)

Bumetanide (Bumex®)

Candesartan + hydrochlorothiazide (Atacand HCT®)

Captopril + hydrochlorothiazide (Capozide®)

Carteolol (Cartrol® oral, Occupress® eyedrops)

Carvedilol (Coreg®)

Chlorothiazide (Diuril®)

Chlorthalidone (Chlorthalidone Tablets®, Clorpres®, Tenoretic®, Thalitone®)

Choline salicylate

Choline salicylate + magnesium salicylate (CMT®, Tricosal®, Trilisate®)

Clobetasol (Clobevate®, Cormax®, Cormax® Scalp Application, Embeline® E, Olux®, Temovate®, Temovate® E, Temovate® Scalp Application)

Clozapine (Clozaril®, FazaClo®)

Conjugated estrogens (Estrace®, Estring®, Femring®, Premarin®, Vagifem®, Cenestin®, Enjuvia®, Estrace®, Femtrace®, Gynodiol®, Menest®, Ogen®)

Conjugated estrogens + medroxyprogesterone (Premphase®, Prempro®)

Corticosteroids (Numerous tradenames: check label.)

Corticotropin

Cortisone (Numerous tradenames: check label.)

Cyclosporine (Sandimmune®, Neoral®, Gengraf®)

[Note: Data from above adapted from www.diabetesincontrol.com and this resource: <http://www.diabetesincontrol.com/images/tools/druglistaffectingbloodglucose.pdf>]

It's important for you to know that this chart is only an example on how big a problem prescription drug hyperglycemic side effects are. If these drugs can cause disruption of insulin, they can increase your risk of cancer and other chronic disease.

If you're taking a drug that is not in the above chart (even if it starts with letters "A" to "C"), please don't assume you're out of the woods with any adverse side effects. Please do a thorough analysis of what you're taking and the possible side effects. Also, due to the use of many generic drugs today, you may have to do some major digging to uncover what the pharmaceutical giants don't want you to know. Here's one example of a site where you can find drug side effects: <http://www.drugs.com/sfx/>. This is a great place to start because it lists both side effect info for you (the consumer) and for healthcare professionals.

Work with your healthcare provider, your pharmacist and your own research to find what you're entitled to know. Never go "cold-turkey" to get off a drug you're taking... always work with your healthcare professional to take the safest and smartest way toward getting off a prescribed drug.

Follow My Seven Simple Steps to a Cancer-Free Life

Dealing with cancer via natural methods entails much more than simply saying "no" to drugs and merely taking the right supplement. It involves a fundamental shift to a lifestyle of clean

eating designed to continually cleanse your body and detoxify. You also need to provide your body with optimal nutrition.

Conventional medical doctors can't even talk openly about effective natural therapies for cancer. For them, the subject is taboo. That is why we often have to discuss the subject in terms of strengthening and building health, rather than "fighting cancer." Only oncologists are officially allowed to "treat" cancer, and I believe they are allowed to use only conventional therapies to do so.

As you've heard me say before in this book – chronic disease is but a symptom of the bigger issue causing all of this, and that's dysfunctional insulin. Focusing on fixing your body's master hormone will not only ward off cancer, it will cure all chronic disease. So, even though there are some specific things like natural cancer-inhibiting supplements to help you deal with cancer, in the end I think that the first priority should be making sure insulin is under control. Otherwise, you could find yourself simply treating the symptoms and not the root cause of all chronic disease.

Fix your master hormone and you'll give your immune function the boost it needs to slash your risk of cancer and the other major health risks you'll face in your lifetime.

Here's a detailed summary of what I recommend you do to do just that. You won't find this combination of take-action steps to fix insulin and boost your overall health in conventional medical guides:

Dietary Guidelines:

It's important that you put the work in and make a conscious effort to get control over the foods you eat. This is, by far, the most important step in getting control over your body's master hormone. I've already given you some solid recommendations in previous chapters, but here's a summary of those and some more:

- I recommend you eat as much wholesome, raw and preferably organic food as possible. Unlike non-organic

produce, raw organic fruits and vegetables should help you avoid exposure to dangerous pesticides and herbicides.

- When it comes to animal foods, the healthiest choices to avoid additives like antibiotics and toxic dyes include: Grass-fed beef, free range chicken and wild caught salmon.
- What I uncovered about “Blue Zoner” diets is a great step toward wholesome eating. On Ikaria most food is cooked in olive oil with wild greens and herbs eaten fresh. Other foods include fruits, legumes, goat’s milk, honey, wholesome Ikarian bread and local wine.^{167,168} In Loma Linda, “Blue Zoners” drink only water (no soda) and focus on eating grains, fruits, nuts and vegetables. Their favorite foods include avocados, salmon, nuts, beans, oatmeal and soy milk. They completely avoid sugar except natural sources from fruit.¹⁶⁹
- Drink plenty of fresh water – Avoid bottled water in plastic containers. It’s best to bottle your own water in glass containers using an in-house filtration system.
- Avoid refined sugars and sweeteners (like HFCS and Aspartame) hidden in processed foods and soft drinks. Best rule of thumb here, avoid processed foods altogether. As far as “Blue Zoners,” processed foods rarely, if ever, reach their tables. Whatever sugar they consume comes from natural fruits and vegetables.
- With our food supply loaded with an overabundance of grains, starches and sweets, it’s important to keep excess carbohydrates from bombarding your system and spiking your insulin levels.
- Focus on eating foods with healthy fats. Say “no” to any food that still has any “Trans Fat” or is made from partially hydrogenated oils. Examples of foods with healthy natural fats include: Olives and olive oil, raw nuts such as

almonds and pecans, coconuts and coconut oil, unprocessed palm oil and avocados.

Key Minerals and Vitamins:

In chapter 2, you learned the importance of two minerals (magnesium and chromium) and two vitamins (vitamin D and K) that go a long way toward protecting the way insulin works. If you need a reminder of why these are so important to your master hormone, please flip back to chapter 2. You'll also see the full list of foods I recommend for each one of these vital nutrients. Eating wholesome, preferable organic, foods with these nutrients is always your best bet. Supplementation can be a secondary consideration if you're still coming up short.

- **Magnesium-rich foods** – There are many foods to choose from here. People living in “Blue Zones” eat a mixture of magnesium-rich foods in their regular diets like... rice, kale and a variety of nuts.¹⁷⁰
- **Chromium-rich foods** – There are a number of vegetables and other foods that have both magnesium and chromium minerals, like broccoli, spinach, beans and the Peruvian grain-like plant quinoa. Herbs and spices are also surprisingly good sources.
- **Vitamin D-rich foods** – Foods rich in vitamin D3 are fish oils, cold-water fish, dairy products and butter. The mushroom is the only veggie containing vitamin D. Your best source of this vitamin is through natural sunshine, which converts vitamin D in your skin to its activated form (D3).
- **Vitamin K-rich foods** – Eating foods rich in vitamin K can help relieve insulin resistance. Typical foods with vitamin K common in “Blue Zoner” diets are leafy greens (like kale), a variety of nuts and olive oil.¹⁷¹

22 Unique Natural Herbs and Supplements that Help Snuff Out Cancer

Even though I recommend that you focus on the action steps here to gain control of insulin function to prevent chronic disease, the environment outside your body can be overwhelming, and it's good to have some extra protection. These will not only help your system ward off cancer, they will boost your overall health as well and work synergistically with insulin and your body's other natural processes.

- 1. Amino acid supplementation:** L-lysine, L-proline, L-arginine, as first presented by Dr. Matthias Rath.
- 2. Beta glucan:** A fibrous, complex sugar derived from baker's yeast, oat and barley fiber and maitake mushrooms.
- 3. Black walnut, sweet wormwood (Artemisinin) and cloves:** This powerful trio cleanses parasites, which infect many cancer patients. Use only occasionally.
- 4. Blood root (Sanguinarine):** Kills skin cancer cells by inducing apoptosis (cell death) in a dose-dependent manner without affecting normal human skin cells. The juice extracted from this root is applied topically.
- 5. Cat's claw:** Herb that grows in Asia and the Peruvian rain forests. Two cohort studies (not in scientific literature) of patients with cancer reported positive effects. It contains alkaloids with anti-cancer and anti-tumor activity that stimulate the immune system.
- 6. Coenzyme Q10:** This life-giving enzyme is a potent antioxidant (400 mg a day) and generator of ATP in normal cells.
- 7. Curcumin:** Proven to kill cancerous cells and slow damage to DNA in healthy cells. This powerful antioxidant is the active ingredient of the Indian spice turmeric.
- 8. Essiac tea:** Promotes cell repair, effective nutrient assimilation and elimination of cellular waste. The four main herbs in Essiac tea include burdock root, slippery elm bark, sheep sorrel and Indian rhubarb root.

- 9. Ellagic acid:** Inhibits tumor growth caused by carcinogens. This powerful antioxidant comes from various berries, walnuts, pecans and pomegranates.
- 10. Graviola and Paw Paw:** From trees in the rainforests along the Amazon; leaves, roots, fruit, fruit seeds and bark are used by South America native healers. It kills cancer by blocking ATP production so cancer cells become programmed to die (called apoptosis).
- 11. Green tea extract:** Proven to slow down cancer growth. In 2003, scientists at the University of Rochester's Environmental Health Science Center found that two chemicals in green tea similar to the bioflavonoids – epigallocatechin 3-gallate (EGCG) and epicatechin-3-gallate (EGC) – inhibit the activity of a key molecule that becomes toxic when exposed to tobacco smoke. It was found in 2004 that two to three cups of green tea have enough active EGCG to bind to a protein found on the surface of lung cancer cells and dramatically slow its growth.
- 12. Hydrazine sulfate:** Blocks a liver enzyme that allows cancer cells to thrive. A Russian study demonstrated hydrazine sulfate's effectiveness in 740 cancer patients (many had received conventional treatments without success) and achieved a 50.8 percent tumor stabilization or regression after just three weeks of therapy.
- 13. Laetrile (vitamin B 17 or amygdaline):** Reportedly found in more than 800 plants, including the seeds of apricots, apples, peaches and cherries. The renowned biochemist Ernst T. Krebs Jr. isolated this and called it vitamin B17. Numerous reports and studies demonstrate its effectiveness against cancer since 1970.
- 14. MGN-3:** Made from rice bran and enzymatically treated with sugar chains from shiitake, kawaratake and surehrotake mushrooms. It enhances natural killer (NK) white blood cell activity as well as B-cells and T-cells.
- 15. Modified citrus pectin:** Binds to cancer cells inhibiting their ability to aggregate and metastasize.
- 16. OPC (Oligomeric Proanthocyanidins):** Grape-seed extracts are proven to cause apoptosis both in the laboratory and by clinical

report. Americans annually spend more than \$141 million on grape-seed products as use of these supplements grow. Plenty of people testify to their effectiveness.

- 17. Pau d'arco:** Powerful pain reliever and cancer fighter found in the bark of a South American tree. Studies show pau d'arco killed lung cancer cells in the laboratory experiments and slowed down cancer growth in mice.
- 18. Protocol and Cantron:** A compound first introduced by a chemist, James Sheridan of Rosell, Mich., in the 1920s. The NCI has issued opposing reports. Shown to be strongly anti-cancer and antiviral in nature, yet safe in recommended dosing.
- 19. Resveratrol:** Compound found in the skin of grapes, this natural substance has significant anti-cancer properties. The FDA has authorized trans-resveratrol to be registered as a new investigational nutraceutical drug for cancer treatment research.
- 20. Vitalzym or Wobenzym:** When taken in high doses, these proteolytic enzymes digest cancer tissues and break down fibrin molecules in the blood stream. These are used in the Dr.'s Kelley/Gonzales enzyme therapy protocol.
- 21. Vitamin supplementation:** The most bio-available vitamins come from whole food extracts because they are bio-identical to what the body best utilizes. These do not contain any synthetic or fractionated vitamins and are not synthesized from a chemistry lab.
- 22. Yeast fighters:** Olive leaf extract, whole leaf aloe vera extract, oil of oregano and grapefruit extract (seed) all fight yeast, an underlying culprit linked to immune weakness.

One of the nutrients above, resveratrol, which is found in grape skins and red wine, is not only a natural cancer fighter. This nutrient has also been found to prevent bone loss and insulin resistance. In other words, the wine Stamatis and his friends enjoyed for years on Ikaria gave their master hormone an added boost and strong bones as well.

Sources: <http://www.alternativecancer.us/>
<http://easyhealthoptions.com/natural-principles-for-dealing-with-cancer/>

Exercise:

One thing is pretty clear to me... exercise of almost any kind not only improves your health and quality of life, it can help fight off cancer. But here's something else that most people aren't aware of... exercise can improve your insulin levels... it can boost your master hormone. But you don't have to take my word for it. A review of 45 studies published in the *Journal of the National Cancer Institute* showed that exercise helps cancer survivors by not only reducing inflammation and boosting immunity, but by also improving their insulin levels.^{172,173}

What effect does exercise have on the risk of cancer, diabetes and other illnesses? As you might guess, fitness correlates with fewer illnesses as we age. A study published in the August 2012 *Archives of Internal Medicine*¹⁷⁴ showed that of 18,670 participants followed for 40 years, those in the bottom 20 percent of the fitness scale had almost twice the chronic illnesses by age 50 as those in the top 20 percent. That's impressive to know: Just by faithfully exercising you can cut your chances of illness later in your life by half!^{175,176}

But what type of exercise is best for you? Certainly, almost any type of exercise is better than not doing any at all. But coming up in a subsequent chapter, I'll introduce you to a type of exercise that I think is by far the best. It will definitely put a dent in some of the myths you've heard out there about exercising.

Rest, Sleep and Stress Relief:

Aside from using a cleansing diet and optimal nutrition to fight cancer and help boost your all-important master hormone, positive energy represents another foundational principle for opposing cancer growth. This energy comes in many forms, all of which are beneficial. And the more varieties you can employ, the better. These include interventions like music therapy, meditation, guided imagery, yoga and massage therapy, as well as energy work by a therapist. Also beneficial: Having an active



sex life or just about anything that infuses the positive energy of bliss, peace and contentment.¹⁷⁷ This all helps keep your stress levels in check as well.

When it comes to sleep, I've always stressed the importance of a good night's rest. But once again, you don't have to just blindly follow my advice. Compelling research shows that the lack of sleep can increase both insulin and leptin resistance.¹⁷⁸ As you already know, this increases your risk of other chronic illnesses like cancer and heart disease.

And I discovered more about sleep and the effects on your master hormone... In a recent study, researchers found that losing as little as 30 minutes of sleep each night can disrupt your metabolism and lead to weight gain. Even more startling, the study showed that for each missed half-hour of sleep it raised participant's risk of obesity and insulin resistance by 17 percent and 39 percent respectively after only one year. So, if you need eight hours of sleep but consistently only get seven, in theory you could be spiking your chances of insulin resistance by 78 percent... raising total havoc with insulin.¹⁷⁹

Here are a few tips on how to improve your sleep habits:

- Plan a specific, consistent bedtime and a time to wake.
- Avoid alcohol, caffeine and spicy or sugary foods four to six hours before bedtime.
- Exercise during the day but not right before bedtime.
- Sleep on comfortable bedding, keep the room temperature comfortable and eliminate disturbing noise.
- Use your bed for sleep and sex, but not for eating, studying or watching TV.
- Drink chamomile tea before bedtime.
- Continue to dismiss negative thoughts as you are falling asleep; focus your mind on things in your life that feel good and on items you are thankful for.
- Take a nice, hot bath.
- Continually strive to find ways to reduce and relieve stress.

If you still have trouble sleeping, it won't hurt to simply supplement with melatonin. Start with a low dose of 0.5 to 1 mg at night. If needed, slowly increase the dose over the next two weeks to find what works, but don't exceed 15 mg each night.¹⁸⁰

Use Nature's Pharmacy:

I've pretty much said all that needs to be said about this earlier in the chapter. It's something that mainstream medicine doesn't want you to hear... and with all the adverse side effects that the pharmaceutical world doesn't want you to know about, my recommendation is that you avoid as many prescription drugs as you can. The fewer you are on... the less likely you're raising havoc with your insulin levels.

Here are three interesting nutrients and herbs I have found to improve insulin function.

Dimethylglycine (DMG) – As reported in *Diabetes* (2015), experimental studies suggest possible protective effects of DMG on glucose metabolism. In this study, researchers (from MIT,

Harvard, Massachusetts General Hospital and Harvard Medical School) found results consistent with a possible causal role of DMG deficiency in diabetes development. “Lower plasma levels of DMG were significantly associated with higher blood glucose levels.”

DMG is responsible for triggering over 41 crucial biochemical reactions in your body that are directly and undeniably linked to how well – or how poorly – you age. It also acts as a detoxifying agent and antioxidant, protecting body cells from unwanted reactions caused by free radicals. Despite all this, at one point, the FDA curtailed its use. Fortunately in 1994, Congress did something right and passed the Dietary Supplement Health and Education Act (DSHEA) and DMG was once again allowed to be sold as a nutritional supplement. DMG is naturally found in plants and food crops and is even produced by your liver.

Chelerythrine – Derived from a natural plant (*Chelidonium majus* – greater celandine), researchers found that chelerythrine reduces the adverse effects (weight gain, fluid retention and cardiovascular risks) of thiazolidinedione (TZD) drugs. TZD drugs are prescribed for their antidiabetic effects but are often accompanied by these adverse effects. Chelerythrine retains the benefits of improving insulin sensitivity while reducing the challenging effects of TZDs.

Chinese JinQi-JiangTang – JQ-R is a mixture of refined extracts from three herbal components of JinQi-JiangTang tablets: *Coptis chinensis* (Ranunculaceae), *Astragalus membranaceus* (Leguminosae) and *Lonicera japonica* (Caprifoliaceae). As published in the *Journal of Ethnopharmacology* (2014) on research conducted at the Chinese Academy of Medical Sciences, animal experimentation shows that JQ-R could reduce insulin resistance by regulating glucose and lipid metabolism, increasing insulin sensitivity and improving beta cell function.

Sources: <http://diabetes.diabetesjournals.org/content/early/2015/03/18/db14-1863.abstract>

<http://www.nature.com/srep/2015/150717/srep12222/full/srep12222.html>

<http://www.ncbi.nlm.nih.gov/pubmed/24286962>

Natural Sunlight:

I brought this up earlier in this list of action steps. I simply want to reiterate the importance of letting your body do its natural thing by producing vitamin D3 through sunlight exposure. This is not about sitting out in the sun for hours. I recommend only 20 minutes a day and using a paraben-free sunscreen on your face. Preventing vitamin D deficiency is paramount in protecting insulin and preventing chronic disease like cancer.

**VITAMIN D LEVELS
25 HYROXY D**

Deficient	Optimal	Treat Cancer and Heart Disease	Excess
<50 ng/ml	50-70 ng/ml	70-100 ng/ml	>100 ng/ml

Multiply ng/ml by 2.5 to convert to nmol/liter

I recommend you try and achieve a vitamin D level between 50-70 ng/ml to protect your master hormone. For cases of chronic disease, higher levels should be considered once you talk to your healthcare professional.

Cleansing and Detoxification:

This is such an important element in gaining better control of your body’s master hormone. Yet, it’s something conventional medicine often ignores. But to me, this is something I feel so strongly about that I’ve devoted an entire e-book to it. You can learn more about why it’s so important and some of the details in the next section in this chapter.

Flush Common Toxins and Supercharge Insulin Function

In chapter 3, I opened your eyes to certain chemicals found in your environment (like pesticides), home (like fire retardants in your mattress) and food (like HFCS and Aspartame) that flat-out raise havoc with your insulin... your body’s master hormone.

I also provided you with ways to avoid these chemicals like... eating wholesome organic foods (not tainted with toxic pesticides)... replacing your mattress (to one not soaked with a chem flame retardant)... and avoiding foods laced with HFCS and Aspartame (primarily soft drinks both regular and diet).

But you still may be faced with nasty chemicals and their metabolites that have lodged themselves in your body over the years. And keep in mind, any of these chemicals that disrupt insulin also raise your risk of cancer and other chronic disease.

That's why I recommend you take steps to naturally cleanse and detoxify your system to remove as many of these risky chemicals as possible. In this section, I'll provide you with a few ideas on how to do that. And at the same time, I encourage you to pick up a copy of my e-book, *Doctor's Inside Secrets for Natural Cleansing and Detoxification*. This e-book has all the specifics you'll need to know about this. And since I believe the e-book is such an important complement to this book that you purchased, for a limited time it's available for FREE at easyhealthdetox.com. So, please download *Doctor's Inside Secrets for Natural Cleansing and Detoxification* without delay.

Here are some quick tips directly from my e-book that should give you an idea on how to work on detoxification and elimination of these chemicals.

Quick Tips:

Five Techniques for Detoxification and Elimination

1. Deep breathing (10 minutes, twice daily) does more than just oxygenate the body. It also calms the autonomic nervous system to energetically reduce stress. During this time, consider meditation with nature music. Breathe out slowly and deeply, and as it were, the frustrations your mind harbors. Visualize the problem being solved and feel gratitude in your heart for the thing becoming resolved. Know that there is a purpose for what you are experiencing.
2. Herbal teas for kidney cleansing can be made by soaking

dried sarsaparilla root, nettle leaves, dandelion or other herbs known for cleansing in hot water as follows: 1 tsp. in 1 pint boiling water for 20 minutes; take once a day. Add stevia powder or agave nectar for sweetener. These nightly teas will also assist in weight loss and help improve energy.

3. Lymphatic flow improves with these strategies:

- “Rebound” (jump) on a mini trampoline or walk for at least 30 to 60 minutes, three to four times a week.
- Finish a hot shower with a one-minute cool or cold-water rinse (which causes a superficial circulatory flush and stimulates the central nervous system).
- Gently and thoroughly dry brush your entire body (except the face) before bathing, three times a week. Brush gently over the skin only in the direction of lymph flow, toward the heart. (A long-handled bath type brush is recommended, containing natural vegetable bristles – synthetic bristles should be avoided. The brush should be kept dry and not used for bathing.)

4. Intestinal function must be optimal to eliminate metabolic toxic waste products. This means at least three bowel movements daily, which is often a natural occurrence during a liquid cleanse.

5. Elimination via the skin is enhanced by all of the following techniques:

- Take warm to hot Epsom salt baths using one to two pounds of Epsom salts, plus one cup of sea salt or baking soda up to twice weekly. Drink plenty of water during and after the baths. The baking soda is very alkalizing. The sea salt is mineral replenishing. Alternating both is encouraged for cleansing.
- Sweat in a sauna twice a week.
- Olive oil-castor oil (50:50 mixture) technique. Apply this mixture all over your body before a 20-minute bath. The water should be as hot as possible without causing

discomfort. This process causes sweating to continue for an additional 30 minutes or longer after the bath when an individual immediately lies between cotton towels under generous bed covers.

In addition to these detoxification and elimination techniques, I also recommend liquid cleansing... it's the most powerful method of detoxification. Liquid cleansing and water fasting have been an integral part of natural and hygienic medicines for over 100 years.

When it comes to liquid cleansing, I give my patients three options to choose from:

- Water only cleansing – the most effective.
- Lemonade cleanse – the next most effective.
- Combination of water and lemonade with fresh juicing.

For more specific details on liquid cleansing and which one works best for you, please download a copy of my e-book, ***Doctor's Inside Secrets for Natural Cleansing and Detoxification***, on the *easyhealthdetox.com* website.

There is no doubt in my mind that this all-important master hormone can be brought under control by liquid cleaning and the consumption of nutrient-rich whole foods. And liquid cleansing can be an important part of initiating the shift to nutrient-rich foods that are low in calories... high in fiber... rich in micro-nutrients... and contain healthy fats.

CHAPTER 5

Revitalize Your Metabolism and Slash Your Cancer Risk 30 Percent with a Proven Workout You Can Do in Less Than 20 Minutes

Imagine being able to lose those extra pounds, get fit, boost your overall health... and not spend hours a day at the gym.

I can tell you this can be easily done, but the first thing you need to do is agree to bust through the traditional exercise paradigm.

What do I mean by that?

Well, even though many official health agencies are quick to point out that we're not exercising enough, they have been misleading us for years on the type and amount of exercise our bodies naturally need. A perfect example is how a 2013 CDC study stated that nearly 80 percent of Americans are not exercising enough.^{181, 182} To me, it's fine to make this type of statement but to tell you the truth, I don't believe they know what they're talking about.

That may seem a bit bold on my part. It's not that I disagree that we all need to focus more on exercise. And I do agree that almost any kind of exercise is better than just sitting in your chair all day long. But to me, there's a form of exercise that better fits how your body was originally designed... and that's not to go spend hours a day in endurance and aerobic-type workouts.

In this high-speed world, who has the time to spend hours a day working out in the first place? The good news here is you don't have to spend anywhere near that amount of time to get lean and mean.

Back in prehistoric times, the human body was built around the need to find food. This “hunter-gatherer” body design evolved around slowly stalking animals and then sprinting in for the kill... a great deal of waiting around and then short bursts of intense energy followed by rest. Back then, you didn't spend tons of time running a constant-speed marathon looking for food.

So, what happened? Today, we all spend a great deal of time sitting in our chairs with steady constant energy usage (busy all day long)... rarely do we have those “prehistoric” bursts of energy... they're simply not needed for survival. We can order anything we want delivered right to our door via a phone call, the Internet or social media.

Well, the modern world has really screwed up your body because of this. But no worries, I'm going to show you how we can fix this with the right type of exercise... a form of workout that requires less than 20 minutes only a few days a week at the most.

See, it all gets back to insulin. This master hormone needs to turn what we eat into energy. Doing what most of us are doing now with our slow constant energy burn and the low-energy foods we consume, your master hormone is just going crazy stimulating your body to turn it all into fat.

The bottom line... you need to reset insulin sensitivity through bursts of energy and high-energy food. That way, your master hormone will help your body build more glycogen needed for those high bursts of energy. In turn, you will get leaner by burning more fat after your workout, without the need to store it up in advance.

You already know about many of the high-energy wholesome foods I recommend from previous sections. When it comes to

getting back to the right type of exercise needed for short bursts of energy to revitalize your metabolism, I'll show you exactly what to do.

But first, let's jump forward to more recent history to better illustrate where I'm going with all this. Perhaps I told you this story before?

Get Lean and Mean with Scientifically Proven "Interval" Exercise

It started almost 80 years ago in the late 1930s.

At the time a German coach, Dr. Woldemar Gerschler, was searching for an exercise training method that would maximize the size, fitness and efficiency of the heart.¹⁸³



In the late 1930s, Dr. Woldemar Gerschler (center) became the pioneer in Interval Training. Gerschler teamed up with cardiologist Dr. Herbert Reindell and developed physical training performance methods that focused on maximizing the size, fitness and efficiency of the heart.

Gerschler teamed up with cardiologist, Dr. Herbert Reindell, and together they carried out experiments with 3,000 participants who each completed a 21-day regimen of precise heart rate controlled training.

What Gerschler and Reindell discovered from their experimentation was that participants experienced a 20 percent increase in heart volume after this short time period and witnessed

significant improvements in performance. Out of this experience, Gerschler and Reindell developed a form of repetition training where an athlete would run a relatively short distance (like 200 meters = 218+ yards) at a relatively fast pace a number of times.

This form of training became known as “Interval Training.” The name was coined primarily because the rest or recovery period between the fast-pace runs was considered the most vital part of the overall training. It’s during the recovery intervals where the heart adapts... and grows larger and stronger.¹⁸⁴

Gerschler became known for his very elaborate scientific approach to training. And when he was asked about the popular Swedish “Fartlek” method of training, he supposedly replied, “It is not exact.”

On July 15, 1939, an athlete by the name of Rudolf Harbig, having been trained by Gerschler using the interval method, ran an 800-meter race in 1:46.6. This time shattered the current world record by over 1.6 seconds... a stunning performance. Less than a month later, Harbig was at it again when he sprinted 400 meters in world record time of 46.0 seconds.

Years later in 1952, the Gerschler-coached Josy Bartheyl from Luxemburg became the Olympic Games champion at 1,500 meters. Rudolf Harbig’s 800-meter world record lasted almost 16 years until it was broken by Belgium’s Roger Moens in 1955. Moens was trained by Woldemar Gerschler.

The thing that’s amazing about the Gerschler story is simply how long ago interval training was first used to help athletes perform at the highest levels.

But as you already know, this type of exercise was exactly how your body was originally designed to work... way back to caveman times. Back then, the human body was designed for hunting and gathering. “Prehistoric” hunters spent hours slowly and stealthfully stalking animals for food. Once cornered, they would sprint in for the kill... or sprint away if threatened. This high-energy burst sparked the caveman’s muscles to perform better and stimulated them to get ready for the next sprint.^{185, 186}

In the next few pages of this chapter, I'll show you how this method of exercise is not just exclusively for athletes (or cavemen)... just about anyone can use it to not only improve your fitness, but to reprogram your body's master hormone and revitalize your metabolism.

Jump Out of Your Chair if You're Serious About Slashing Your Cancer Risk 30 Percent

Before I jump into more details on interval training and how it can benefit you, it's important to remember what I pointed out in chapter 4. And that's exercise of almost any kind can help improve your insulin function.

Along with a healthful high-energy diet, exercise is a key element in protecting your master hormone and avoiding chronic disease.

Exercise helps reduce inflammation, boost your immunity and improve your insulin levels. This was all brought out extensively in research that reviewed 45 studies published in the *Journal of the National Cancer Institute*.^{187,188}

Additional analysis I uncovered from the University of North



Carolina, showed that any kind of exercise – intense or moderate – can help fight off breast cancer. In fact, researchers found that certain levels of exercise could drop your cancer risk by at least 30 percent.¹⁸⁹

Enough said. I don't want to overwhelm you with all the studies I found on this subject... and there are lots of them. But the point here is that exercise is vital to boost insulin function and to shield you from chronic disease.

I'm sure you're not just a couch potato lying around doing nothing. But sitting around in a chair all day long as we've all been programmed to do, is not going to help fix your master hormone. Even though any type of exercise is better than just sitting around, I feel interval type training will by-far yield you the best results by how it helps reprogram your master hormone. You'll burn more fat than you ever thought possible.

Without any doubt, one of the most challenging issues with exercise is finding the time. Almost everyone today is moving at the speed of light... whether it's in your job, or taking care of family needs or just about anything you do. That's where interval training, which you'll soon find out has many different names and associated programs, can help. Not only will it save you time from a scheduling standpoint, I'm here to tell you that it's actually phenomenal for you from a health and fitness standpoint by resetting your master hormone to do what it's supposed to do.

Don't Just Take My Word for it – Four Health and Fitness Advocates Agree this Form of Exercise is Over the Top

After studying this for several years and recommending it to certain patients, I'm truly convinced that the best form of exercise is now what's called "high-intensity interval training" (HIIT). HIIT not only improves your fitness, it boosts your overall health in many ways... including solid protection of insulin function.

Now, I don't want you to freak out and think too much about the "high-intensity" portion of this. Believe me, there are ways to take advantage of this form of exercise from the get-go. You don't have to be some super-athlete ready to run flat-out sprints to get started. You don't even have to join a gym unless you want to. That's the beauty of this type of exercise.

I'll provide you with some examples of HIIT programs out there that I recommend you check out... but first let's take a closer look at the overall benefits. To do that, and so you won't have to just take my word for all this, I've narrowed down my research from some esteemed colleagues on the benefits of interval training.

From Dr. Mark Wiley – Dr. Wiley holds doctorates in both Oriental and alternative medicine, has done research in eight countries, and has developed a model of health and wellness grounded in a self-directed, self-cure approach.¹⁹⁰

- While metabolic syndrome (also known as "insulin resistance syndrome") is a serious health issue, reversing it seems to be as easy as adjusting your lifestyle in two simple ways... diet and exercise.
- When it comes to exercise, research has shown that a form of interval training can make a big difference for those with metabolic syndrome.
- According to research from Norway reported by *WebMD* on a study conducted with 32 adults with metabolic syndrome: "The interval training group showed more improvements in how their bodies handled blood sugar and responded to insulin, a hormone that controls blood sugar. Also, HDL ("good") cholesterol increased by about 25 percent in the interval training group, but not at all in the other groups."¹⁹¹

As reported by Carl Lowe – Mr. Lowe has researched and written about health, fitness and nutrition for a wide range of publications including *Prevention Magazine*, *Self Magazine* and *Time-Life Books*.¹⁹²

- Research into exercise physiology has identified the fastest

method for developing muscle and endurance. This brief technique taps into an ancient part of your nervous system and mobilizes a remarkable natural substance.

- The method for building your fitness consists of workouts that use intense interval training. By engaging in short, very strenuous exercise with brief rest periods, you can improve your blood sugar control, lose weight and achieve overall fitness.
- The natural substance your body releases in response to this training is a unique molecule called CRCT2. Researchers at the Florida campus of The Scripps Research Institute have shown that intense exercise taps into the sympathetic nervous system's "fight or flight" reaction, and uses CRCT2 to integrate nerve signals from two separate pathways (what are known as the adrenaline pathway and the calcium pathway) to stimulate muscle growth.

According to Dr. Joseph Mercola – Dr. Mercola is an osteopathic physician (DO) and is board-certified in family medicine. He has been interviewed on national and local news including the *Today Show*, *CNN*, *The Dr. Oz Show* and has authored three *New York Times* Bestsellers, *The Great Bird Flu Hoax*, *The No-Grain Diet* and *Effortless Healing*.^{193,194}

- Over the last several years, researchers have slowly come around and reached the consensus that high-intensity interval training (HIIT) outperforms conventional aerobic endurance type exercises. HIIT is characterized by relatively short bursts of intense exercise followed by intervals of rest.
- Not only does HIIT beat conventional cardio as the most effective and efficient form of exercise, it also provides health benefits you simply cannot get from regular aerobics... such as a tremendous boost in human growth hormone (HGH), aka the "fitness hormone."
- Dr. Michael Mosley, author of *Fast Exercise: The Simple Secret of High-Intensity Training*, reported on research that showed as little as three minutes of HIIT per week can

produce significant health benefits. Dr Mosley himself was able to improve his insulin sensitivity by 24 percent by putting in a mere 12 minutes of intense exercise per week over a four week period.

- From the journal *Cell Metabolism* (2012),¹⁹⁵ a study showed that when healthy but inactive people exercise intensely, it produces an immediate change in your DNA (even if the exercise is brief). While the underlying genetic code in the muscle remains unchanged, exercise causes important structural and chemical changes to the DNA molecules within the muscles. Specifically, the study suggests that when you exercise, your body almost immediately experiences genetic activation that increases the production of fat-busting proteins! Besides lowered body fat, other benefits associated with high-intensity interval training include... improved muscle tone... firmer skin and fewer wrinkles... high energy levels... improved athletic speed and performance... and a boosted sex drive.

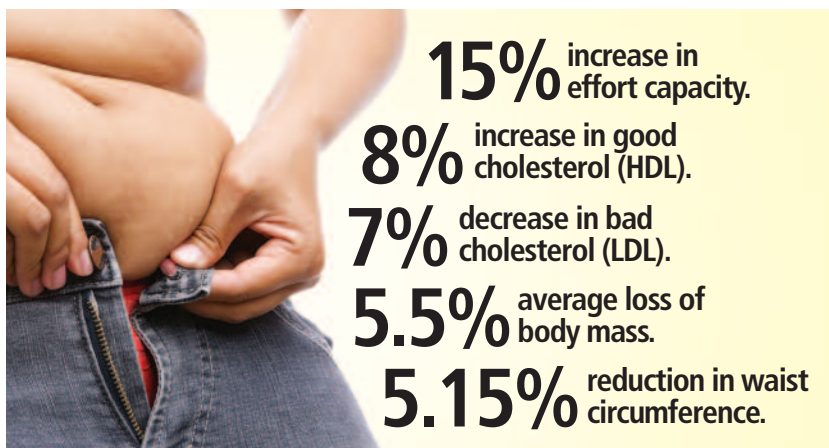
Based on Dr. Al Sears' research – Dr. Sears is founder of the Center for Health and Wellness, a successful integrative medicine and anti-aging facility in Royal Palm Beach, Florida, with over 25,000 patients. Dr. Sears is board-certified as a clinical nutrition specialist and is also an ACE-certified fitness trainer.^{196,197}

- Many of today's most widespread conditions and illnesses are associated with shorter telomeres. Telomeres are the tiny genetic "clocks" that tell your cells how old they are and how old to act. In one telomere study, people with the longest telomeres were more than 10 times less likely to develop cancer than people with short telomeres.¹⁹⁸
- There's a simple alternative to cardio exercise that can help you maintain your telomeres so you can live stronger and longer. This type of exercise is the opposite of aerobics and other endurance exercises, which shorten your telomeres and make you more susceptible to cancer and heart disease.

- As bad as it is to have accelerated telomere loss, that's exactly what endurance exercise does. And the studies proving it have been completely ignored by mainstream fitness "experts."
- Fortunately for you, we now have the ability to influence the length of these tiny genetic clocks. You can have younger-acting cells and help avoid age-related problems by maintaining your telomere length. The most powerful way to do this is to do the opposite of what fitness experts recommend. Instead of hours of low-power exercises like running and cardio, you can maintain the length of your telomeres with shorter periods of exertion where you challenge yourself a bit more. What you want to do instead is give your body a challenge, and do it over shorter periods of time. Interval-type exercise can benefit you by... raising your levels of human growth hormone (HGH)... burning more calories... tapping the strength of your large muscle fibers... providing more strength and greater fitness in less time... and boosting your heart health.

By now, you should have a good picture of why I feel high-intensity interval training provides such huge benefits to your health and fitness... and it all starts with how it can help supercharge your master hormone. And this form of exercise can have a big-time influence on your telomeres. I'll have more on telomeres coming up in a subsequent chapter, but before I jump into some actual examples of HIIT, there's more research I uncovered that needs to be brought out on the benefits of HIIT:

- Being overweight and suffering from obesity can wreck insulin and lead to type 2 diabetes, and increase your risk of other chronic disease. In a nine-month study conducted by researchers at the Montreal Heart Institute, the 62 participants lost an average of 5.5 percent of their body mass, reduced their waist circumference by about 5 percent, and improved their ability to exercise by 15 percent. What did the participants do to achieve this? A combination of interval training and a Mediterranean-type diet (think Stamatis' diet on Ikaria).^{199, 200}



Being overweight can put undue stress on your master hormone. As reported by the Montreal Heart Institute's nine-month study, overweight participants who used interval training along with a Mediterranean-style diet showed significant improvements in health and performance markers.

- A study conducted at Bowling Green State University showed that HIIT is the best way to derive super fitness benefits from exercise in the smallest amount of time. The Bowling Green scientists had eight women and eight men ages 19 to 30 perform self-paced, intense interval training that incorporated varying periods of recovery time. All of the subjects in the study had at least a moderate fitness level and took part in at least one session of interval training per week.^{201,202}
- A Danish study found that by switching back and forth between walking intensely and then using a slower pace to rest, you can manage your blood sugar better than walking at a slower constant speed. The participants in the study already had type 2 diabetes. Researchers found that the people who varied their pace with interval walking enjoyed steadier blood sugar control, a benefit the researchers believe is linked to improvement in insulin sensitivity and more uptake of blood sugar by the body's cells. The interval walkers also showed improved insulin signaling in the cells of their muscles.^{203,204}

I think the most interesting research I uncovered here is the Danish study where a form of intense interval walking improved participants' master hormone. That goes to show that you don't have to be a super-fit athlete to reap the benefits of HIIT... you can start out slow at your own pace and build up over time.

Another important point with this whole intensity thing is what's occurring in your body from a fuel source perspective. During exercise, your body can select from several different sources of fuel:²⁰⁵

- Fat
- Carbohydrates (glycogen)
- Protein

Now, the most obvious thing to think here is that burning fat is the way to go. If you burn more fat while you exercise, you'll take off the pounds and get fitter... right? Well, nothing could be further from the truth.

The problem with burning fat during exercise is that you're actually signaling your body that fat is needed for fuel. This in turn trains your body to make even more fat for the next time you exercise and puts your master hormone in a tailspin. Your body then replenishes the fat each time you eat and becomes efficient at building and preserving the needed fat for your next endurance workout.²⁰⁶ Now you end up in a vicious cycle.

Durational and endurance-type exercise stimulate your body to build more fat. But with high-intensity exercise, you burn very little fat and instead burn the glycogen stored in your muscles for fuel. By burning glycogen during your workout, your body will burn fat *afterwards* in order to restore fuel levels in your muscle tissue. By doing this repeatedly your body will become trained to burn fat *after* your exercise, not to build up needed fat for your next workout, and help get your master hormone back on track.

Interesting enough, walking burns high amounts of carbs (glycogen) and a low amount of fat. But as soon as you move up to endurance exercise, that flips around and your primary fuel source now becomes fat. That's why I highly recommend that if you want to move up from an exercise like walking, you should jump to a form of interval training as your next step so you'll burn glycogen during your workout and fat afterwards.

Three Exclusive Interval Training Programs to Increase Your Energy and Safeguard Your Master Hormone

Despite the continued emphasis by many fitness gurus out there for cardio and aerobic exercise, I no longer recommend this as the preferred type of workout. Some fitness experts have come to slowly realize the importance of HIIT. But many still recommend aerobic endurance exercise as the focused part of your total regimen. To me, aerobic exercise is fine once in a while to change things up... but I recommend shorter interval-type exercise and strength training depending on the individual needs of my patients.

As far as providing details on interval training programs, there are three I've checked out that I would recommend you consider. Each one of these has subtle differences from the other two... but in the long run, the results they've achieved speak for themselves.

- **Sprint 8®** – Developed back in the 1990s by one of the pioneers in HIIT, Dr. Phil Campbell, the Sprint 8® exercise protocol requires only 20 minutes and is effective for all ages and fitness levels. The protocol involves four minutes of warm-up and cool down, eight 90-second low-intensity recovery intervals and eight 30-second high-intensity sprint intervals (anaerobic exercise). The Sprint 8® workout program has been proven to boost energy, reduce body fat, and

promote lean muscle mass.^{207,208} For more info on Sprint 8®, here's a place to start: <http://bgifitness.com/about/phil-campbells-sprint-8-and-vision-fitness-pg211.htm>

- **Peak Fitness** – Dr. Joseph Mercola created his own flavor of HIIT. The Peak Fitness method involves 30 seconds of maximum effort followed by a 90-second recovery interval. This is performed eight times but fewer reps can be performed when you're just starting out. In fact, Dr. Mercola personally practices this method and he eventually modified the number of repetitions down to six times specifically for himself. Everyone is different on what works best for them... so, it's important to listen to your body when performing HIIT. If you're interested in finding out more details on Peak Fitness, go to Dr. Mercola's site www.mercola.com.²⁰⁹
- **PACE®** – Dr. Al Sears developed his own well-researched and proven method of HIIT. In fact, he doesn't even consider PACE® interval training per se and focuses more on allowing you to start from any level of conditioning. No need to start out sprinting if you're not ready for it. PACE® has a progressive element that allows you to challenge your heart and lungs just a bit more with each exertion set and with each workout, as you're ready. Dr. Sears also took HIIT in a different direction by focusing on your heart rate during the recovery period, and not just basing your rest period solely on time. For more info about the PACE® program, you can check it out at www.alsearsmd.com.^{210, 211, 212}

In addition to the fitness and health benefits you can achieve from any one of these variations of interval programs, an often undervalued benefit clearly stands out to me and that's efficiency. By efficiency I mean that in only about 20 minutes a day (sometimes even less) and only a few times a week, you can get fit and boost your body's master hormone. No need to spend hours a week doing endurance cardio... no need to even join a gym.

There are some other types of exercise that I feel are important to your health and fitness, let's get to them next.

Four Exercises to Complement HIIT that Maximize Your Full-Body Fitness Level

HIIT engages far more of your muscle than conventional aerobic-type exercise. Endurance athletes like marathon runners only train their “slow” muscle fibers. Your “super-fast” muscle fibers, which contain less blood and less densely packed mitochondria, are the muscles you employ when performing HIIT. These muscles are 10 times faster than “slow” muscle fibers and are key to producing human growth hormone (HGH).²¹³ Plus, interval-type exercise reprograms your master hormone to help stimulate your body to burn glycogen during your workout and fat afterwards. Your body gets trained to store glycogen and not fat for that next anticipated burst of speed.

With all this said about HIIT, there are other exercises that I recommend you do to complement your high-intensity workouts. These four exercises will help round out your overall fitness and nurture insulin.

- 1. Get Up Out of Your Chair Every 15 Minutes** – Research has shown that prolonged sitting can have negative effects on your health. Your body has the need to interact with gravity in order to function properly and should be ongoing throughout the day.
- 2. Incorporate Strength Training** – Including strength training as part of your exercise regimen will help ensure you’re fully optimizing the health benefits from your overall program. You’ll need to do enough repetitions to exhaust your muscles. Do not exercise the same muscle groups each day. Instead give each muscle group at least two days of rest to recover, repair and rebuild.
- 3. Include Core Muscle Exercises** – Your body has 29 core muscles located in your back, abdomen and pelvis. These core muscles provide the foundation for movement for your entire body. Strengthening these muscles will help support your back, protect your spine against injury and improve

your balance and stability. Pilates, yoga, crunches and stand-up paddle boarding are examples of exercises that help strengthen your core muscles.

- 4. Don't Forget to Stretch** – Staying flexible is important for sex and for preventing injury. Yoga is a great type of exercise for maintaining flexibility. There's also "dynamic stretching," which activates muscles by using some of the same actions as static stretching, but with more athletic movement – for example, shoulder swings, hip circles and half-squats.

It's important to keep in mind that performing HIIT and these complementary exercises are vital for your overall health and fitness. But without a proper diet made up of wholesome raw (and preferably organic) fruits and vegetables, no exercise regimen in the world can over-compensate for a poor diet. The two need to work hand-in-hand to protect and balance insulin.

Get Started TODAY with the Proven Method to Easily Supercharge Your Master Hormone and Boost Your Overall Health and Fitness

By now, I'm sure you have a solid understanding of why exercise is such an integral part of your overall health. This may not have surprised you at all. But I think the most important takeaway here is the best type of exercise for your overall fitness and health is, by far, some form of interval training. Not only does this type of exercise boost your fitness, it's paramount in revitalizing your metabolism and supercharging your body's master hormone. What got its start back in the 1930s with Dr. Woldemar Gerschler's and Dr. Herbert Reindell's performance experimentation, has evolved into a type of exercise that anyone can quickly and easily do today... a type of exercise your body was designed to do from prehistoric times.

CHAPTER 6

Get a 70 Percent Better Brain – Just Follow These Simple Guidelines

Almost everyone, regardless of age, is concerned about the devastating effects of dementia and Alzheimer's as we grow older. Let's face it, it's everywhere you look.

Who doesn't have a friend or family member dealing with this disease right now? Who wants to look forward to a failing memory and other cognitive functions in their golden years... a time when remembering earlier life experiences can mean so much to you?

I know this is not something I look forward to... and it's something I plan on putting a stop to anyway I can. And I'm ready to share all I've uncovered on what you can do to fight this off right away and not wait for typical signs and symptoms.

So, where do we begin?

Well, there are places on Earth where dementia is rare and Alzheimer's doesn't really exist. The island of Ikaria off Greece.^{214,215} The island of Bali. Okinawa in Japan.

One thing all these people have in common is that these people are known for staying active.

A Cambridge University study I discovered followed over 1,100 people for more than 10 years. Researchers found that the people who were the most socially active had a 70 percent slower rate of cognitive decline.^{216,217}



On the beautiful islands of Ikaria, Bali, Okinawa and Sardinia, chronic disease is significantly less than other places. Dementia is rare and Alzheimer's almost non-existent amongst the socially active population.

So, despite all the negative data thrown at us by government and health agencies – things like five million Americans are currently dealing with Alzheimer's and by 2050 the number could reach a staggering 14 million²¹⁸ – I don't believe one bit that we need to just submit to all this and throw our hands up.

I by no means am willing to simply accept that dementia is just a normal part of aging and there's little you can do to stop it. Coming up, I'll show you why I have this overwhelming passion and things you can do to take action now... before it's too late.

I can flat-out tell you that staying active is just one of the important factors involved in warding off dementia and Alzheimer's. In this chapter, I'll dig deep to reveal to you all you can do to boost your cognitive health to prevent this... and not simply accept it as a normal part of aging. And it all starts with taking care of insulin...

Fix Your Master Hormone to Cure “Type 3 Diabetes”

In chapter 1, I introduced you to the fact that your pancreas is not the only organ that produces insulin... your brain does as well. And that’s why Alzheimer’s was, at one point in time, deemed “type 3 diabetes.”

The straight scoop on all this is... if your master hormone is dysfunctional, an inadequate supply of insulin in your brain leads to degeneration of your brain cells. This in turn can contribute to dementia. As I indicated in chapter 1, studies have found that people with lower levels of insulin and insulin receptors in their brain often have Alzheimer’s.²¹⁹

But it doesn’t just stop here. Another study I uncovered shows us that chronic high levels of insulin and sugar could be toxic to brain cells ... potentially leading to dementia.²²⁰

Healthy insulin response is key to nurturing healthy brain cells. Otherwise, your brain could suffer from low levels of insulin and/or be overwhelmed with excessive levels that weaken your brain cells and increase your risk of cognitive decline.

Here is something else that’s not well understood. Your brain does not necessarily need glucose to thrive. In fact, ketones (or ketoacids) are a better source of brain-energy that convert fat (instead of glucose) into energy.

This energy source is better because it helps you avoid over-bombarding your brain with excess sugar. And we already know what happens when you overwhelm your master hormone with excess sugar.

Also, if insulin is out of whack and you have diabetes, there are two ways your brain can be impacted – damage to your blood vessels and brain cell degeneration.

So, how do you do a better job of protecting your master hormone and nurturing your brain to fight off dementia? That’s where we’re headed in the next few pages of this chapter.

My Top 10 (Plus 1) Wholesome Foods to Boost Your Brainpower

I can't emphasize it enough when it comes to a healthy diet. Increasing your intake of fresh, raw fruits and vegetables is a surefire way to help enhance your overall health and boost your brain vitality as well.

Research has shown that vegetables, such as spinach, could be beneficial in supporting your central nervous system and cognitive behavior. Plus, adding more raw, preferably organic, vegetables to your diet could play a key role in helping reduce cognitive decline. You've already heard how important a role fresh vegetables play in the typical "Blue Zoner" diet.

Here are some examples of wholesome foods I recommend you add to your regular diet to specifically boost your brain vitality and protect your master hormone:

1. Coconut Oil – This is at the top of my list not only because it is an incredible health-promoting fat beneficial for your brain, it's also a phenomenal source of ketones. One of the primary sources of ketone bodies is medium-chain triglycerides (MCTs) found in coconut oil. When you consume coconut oil you stimulate your body's own production of ketone bodies. Remember, ketones convert fat into energy... a much better source of brain-energy than sugar. MCTs can also be found in avocados and nuts.

2. Curry – I strongly recommend curry because it contains a spice called turmeric. Within turmeric is a powerful anti-inflammatory antioxidant known as curcumin. This active ingredient may help inhibit the accumulation of destructive beta amyloids found in Alzheimer patients' brains. Other research has shown that curcumin influences neuron creation and enhances memory.

3. Blueberries – One of the biggest enemies your brain faces is oxidative stress from free radicals generated by things like toxins, illness, and stress to name a few. As levels of free radicals increase, they create a cascade of inflammatory chain reactions that can damage brain and other cells, down to their DNA. Antioxidant

foods can help block this cycle. Blueberries are a rich source of brain-healthy antioxidants and phytochemicals. These antioxidants have been linked to improvements in learning, thinking and memory. Blueberries have been shown to protect your neurons from oxidative stress. Other antioxidant-rich choices include beans, cranberries, artichokes, prunes and raspberries.

4. Celery – Celery is a rich veggie source of luteolin... a plant compound that calms inflammation in your brain. Luteolin has also been shown to improve memory in animal tests. Other rich sources of luteolin include peppers and carrots.

5. Broccoli and Cauliflower – These two delicious veggies are good sources of choline, a B vitamin known for its role in brain development. Choline boosts cognitive function, may even diminish age-related memory decline and protects your brain from toxins during childhood and later in life as well. Other sources of choline are grass-fed beef and free-range eggs.

6. Red Meat – Organic grass-fed beef is an excellent source of brain-protecting vitamin B12. A small Finnish study published in *Neurology* found that people who consume foods that are high in vitamin B12 may reduce their risk for Alzheimer's. Since B12 is found in animal food sources, I don't recommend a strict vegetarian diet for optimal brain health. Other food sources of B12 include wild-caught salmon, organic calf liver and free-range eggs.

7. Walnuts – These nuts are phenomenal sources of plant-based omega-3 fats, which contain phytosterols and antioxidants shown to protect your brain. Another nutritious source of plant-based omega-3s is flax seed. And DHA, a type of animal-based omega-3 fat, has been found to boost brain function and even promote brain healing. My favorite source of animal-based omega-3s is wild-caught salmon.

8. Crab – Fresh crab meat is a fantastic source of phenylalanine. Phenylalanine is an amino acid that helps produce the neurotransmitter dopamine, brain-stimulating adrenaline, your thyroid hormone and helps fight Parkinson's disease. This delectable meat is also a good source of vitamin B12.

9. Garbanzo Beans – In chapter 2, I provided you with chart of

foods that are rich in magnesium. Well, garbanzo beans is an excellent source of magnesium citrate which benefits your brain cell receptors to speed the transmission of messages. In addition, it also helps relax your blood vessels which increases blood flow to your brain.

10. Honokiol – One of the most potent antioxidants out there is this botanical. Derived from Magnolia bark, honokiol is 1,000 times more powerful as an antioxidant than vitamin E. Honokiol has been shown to protect the brain in numerous ways. Because its molecules are so small, honokiol taken orally is very easily absorbed, and even has the unique ability to pass through the blood/brain barrier. This allows it to exert its effects directly on brain tissue. Honokiol is shown to improve mood, influencing GABA and other neurotransmitters that help mediate both anxiety and depression. It also is shown to aid in stroke damage and protect against the amyloid plaque associated with Alzheimer’s disease.

11. Healthy Fats – Your brain needs health-promoting fats for optimal function. I’ve already mentioned some of these foods previously as they contain other brain-healthy nutrients. Here’s my list of beneficial food examples with healthy fats for your brain: Organic grass-fed raw butter, olives, organic virgin olive oil, coconut oil, pecans, macadamia nuts, free-range eggs, wild-caught salmon and avocado.

Many of these foods on my list (above), I’ve already mentioned in previous chapters of this book. That’s because most of the foods not only nurture your brain, they also are vital in boosting insulin sensitivity as well. Keep in mind, your brain produces insulin just like your pancreas. And keeping this master hormone in balance is critical to keeping your brain function at its optimal level.

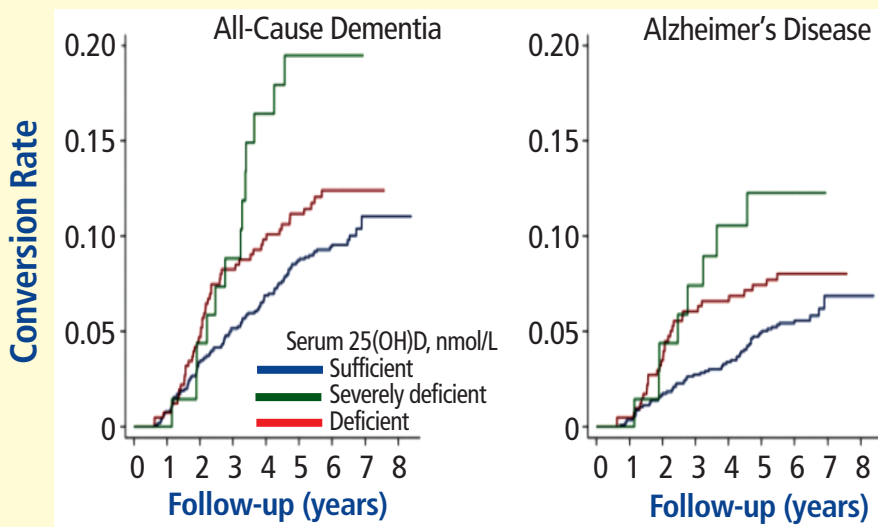
Cut Your Dementia Risk in Half with the “Sunshine” Nutrient

When your body naturally makes vitamin D from sunlight (vitamin D in your skin is converted to its activated form of D3), it helps protect your brain against serotonin and dopamine depletion. Serotonin and dopamine are the main “feel-good” neurotransmitters

in your brain. It also appears that vitamin D deficiency increases your risk of depression by as much as 14 percent.

There's also growing evidence that dementia is directly linked to low levels of vitamin D. In a study I reviewed in *Neurology*, researchers found that seniors who had low vitamin D levels may double their risk of dementia, including Alzheimer's disease.²²¹ See study figure below.

Kaplan-Meier curves for unadjusted rates of all-cause dementia and Alzheimer's disease by serum 25-hydroxyvitamin D (25(OH)D) concentrations



Neurology study data shows that if you are deficient in vitamin D, you could double (or more) your risks of dementia and Alzheimer's. Without vitamin D, your risk of dementia and Alzheimer start skyrocketing after years two-three (disease "Conversion rates" in chart climb steeply over time when deficient in vitamin D). Just one more reason why keeping your master hormone in check with adequate levels of vitamin D is so vital to your cognitive health.

You learned earlier how important vitamin D is to your master hormone, and how a deficiency can raise havoc and open you up to all sorts of chronic illness. Well, insulin and brain health go hand-in-hand when it comes to vitamin D.



Here again is the important info on how to make sure you're getting an adequate supply of vitamin D with some additional information you should be aware of...

If you're below 35ng/ml, here are my standard recommendations to improve your level:

Sunshine exposure to your skin: 20 minutes of sunshine daily (I recommend you protect your face with a paraben-free sunscreen) will convert vitamin D in your skin to its activated form (D3) and maintain optimal levels. As I said earlier, this is at the top of my list for getting natural vitamin D.

Diet: Foods rich in vitamin D3 are fish oils, cold-water fish, dairy products and butter. There is only one vegetable that has vitamin D, and that's the mushroom at 114 IU per cup.

Supplementation: 1,000 International Units (IU) daily or 5,000 IU twice weekly of vitamin D3 is typically all you need to

do to boost and maintain your level adequately.

However, in a perfect world, these amounts would be fine to support healthy vitamin D levels. But with the typical American diet heavy in processed food and because vitamin D is so important to the vitality of your master hormone, I recommend the following modifications to help rebuild your insulin and overall metabolic levels:

■ **Sunshine** – Since everyone’s skin can vary so much in texture, color and absorption, the rule of thumb for the amount of sun exposure needs to vary as well. I recommend that to optimize your vitamin D3 levels you expose large amounts of bare skin to the sun until it turns the lightest shade of pink. If you have darker skin, you’ll need to pay closer attention as to when your skin turns slightly red. But whatever you do, avoid seriously burning and turning your skin a painful bright red. Here are the 10 factors that come into play as far as how long you need to stay in the sun to optimize vitamin D3 production:

1. Antioxidant levels and the food you eat.
2. Age and your weight.
3. Skin color and/or current tan level.
4. Use of sunscreen.
5. Latitude and altitude (elevation) of where you are.
6. Cloud cover and pollution level.
7. Ozone layer.
8. Surface reflection.
9. Time of the year (season).
10. Time of day.

■ **Diet** – Pasteurized dairy is not one of your best sources because most of it is fortified with synthetic vitamin D2 and not the preferred D3. If you enjoy milk, raw milk is your best bet because it contains D3. Other foods rich in D3 include salmon, mackerel, tuna, sardines and egg yolks.

■ **Supplementation** – To better protect your master hormone I

recommend you look to achieve a vitamin D level of 50-70 ng/ml. To do that, and depending on how much D3 you're getting from sunshine, adults typically need around 8,000 IUs on a daily basis. As far as finding a good, high-quality source of vitamin D3, here's a good place to start: <https://labdoor.com/rankings/vitamin-d>.

So, how do you find out your vitamin D3 level from a combination of sunshine, food and supplementation? As I strongly recommended in an earlier chapter, you need to get your level tested to make sure you're fully optimizing the benefits of D3. The test you need is called a 25(OH)D blood test. It can be done at any doctor's office, or home test kits are available that can be sent to a lab.

Steer Clear of These Eight “Bad Guys” if You Want a Faster Brain

In protecting your brain health, it may be even more important to know the types of food and other things to avoid, as it is to know what foods nurture your brain health. As you'll soon see, most of these foods and other items I recommend you avoid, you've already heard about earlier in this book. And that's because these items have been proven to trash your master hormone. By saying “no” to all of these, you'll not only protect insulin function, you'll protect your brain vitality as well.

Here's my straight-forward list of what you should steer clear of as soon as possible:

- **Avoid excess sugar and fructose** – Limiting the amount of sugar in your diet and eliminating HFCS can be key factors in the overall health of your brain and key to a more effective master hormone. Bombarding your brain with excessive sugar triggered by out-of-control insulin production can lead to memory, speech, personality and movement control issues...
as well as cause your brain's neurons to stagnate.
- **Cut your consumption of grains** – Excessive sugar and grains are the driving forces behind insulin resistance, one of

the most pervasive influences behind a less-than-optimal brain. Processed grains are readily converted to blood sugar and can quickly become your brain's worst enemy.

- **Don't consume Aspartame** – There are many studies that show the inherent risks from Aspartame (found primarily in diet soft drinks). You already know how it disrupts insulin and can worsen your insulin sensitivity. It also can affect your memory, lead to tumors and increase your Alzheimer's risk.
- **Remove unfermented soy from your diet** – Unfermented soy products, such as tofu, have been shown to potentially cause cognitive impairment and have been associated with low brain mass. Just like it's important to avoid grains and simple sugars, soy is an inflammatory food that can increase your risk of insulin resistance.
- **Avoid mercury** – Dental amalgam fillings are a major source of mercury that can potentially “leak” vapors into your system. These “silver” fillings consist of 50 percent mercury, a known neurotoxin that can potentially cause less-than-optimal neurological health. Studies have also detected unsafe mercury levels in HFCS. And exposure to toxic metals like mercury can increase your risk of insulin resistance.
- **Steer clear of aluminum** – You may not be aware that many antiperspirants contain aluminum that you're applying under your arm. Once there, it can get into your bloodstream and is not a good thing for optimal brain vitality. Aluminum has been shown to be potentially associated with plaques and tangles in the brains of people with Alzheimer's disease.
- **Eliminate fluoride** – Fluoride is a powerful neurotoxin found in common tap water, certain bottled waters and some toothpastes. Fluoride can also be found in pesticides and you know the havoc they can cause with your master hormone. Eat organically grown fruits and vegetables to avoid toxic pesticides.
- **Go gluten free** – Due to its effects on your immune system (whether you have celiac disease or not), I recommend you stay away from as much gluten as possible. Gluten protein is

Six Great Ways to Challenge Your Brain for a “Mind-Blowing” Experience

Since this chapter has focused on how to build a better brain, here are some ideas on how to better challenge your mind on a regular basis. To keep your mind active, I strongly believe it’s important to stimulate your brain with things like learning something entirely new, traveling to inspiring destinations and performing thought-inspiring exercises like crossword puzzles.

As you age, it becomes even more important to continue stimulating your mind. And you don’t have to just take my word for it. Many studies have proven this. For example... in a study of people aged 85 and older, people who engaged in artistic, craft and social activities in mid and late life, and who used a computer late in life, showed lower risk of mild cognitive impairment (MCI).

Here are six examples of brain-challenging activities that you can easily do from just about anywhere:

- 1. The desktop game:** The game, IOTA™, helps improve your visual-spatial skills leaving you more able to remember and understand things from a visual standpoint. IOTA has simple rules but the moves can really challenge you. The game comes in a lightweight box that will easily fit on your desktop.
- 2. The brain-training app:** Lumosity was created by neuroscientists using the theory that the brain is malleable and constantly changing in response to new experiences. These 40-plus games are enjoyable (can become addicting) and don’t feel like a tedious brain-training chore.
- 3. The puzzle book:** A great place to go for brain-training puzzles and more is Nancy Linde’s book, *399 Games, Puzzles and Trivia Challenges*. This book has nearly 400 games designed to get your brain thinking in new ways and targets cognitive functions such as thought, language and attention.

4. The focusing task: Here are four simple tricks to use to help you focus and improve your concentration:

- Count backwards from 100 in your mind.
- Hold an object in your hands with arms outstretched and focus on it as long as you can.
- Take a book or newspaper and count the words on a page.
- Sit still for as long as you can without moving a muscle (not that easy to do).

5. The news quiz: Read news articles and test yourself by taking a news quiz to see how much you really remembered. Here's a link for an example of a quiz to test your memory:
<http://www.newscurrents.com/intro/quiz/quiz.html>

6. The inspiring talk: Listen to, or view inspirational talks online. They can help you get into a more relaxed and positive mindset. "TED talks" is great for this and is a free online resource of educational lectures (many lasting only a few minutes).

Just like you need to physically workout your body with exercise, your brain needs its own workout to keep it in tiptop shape.

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found in wheat, barley, rye, spelt, kamut and tritical. Having a healthy immune system is one of the keys to avoiding inflammation and protecting your master hormone. As far as your brain, gluten can cause brain fog, dizziness, migraine headaches, memory loss, mood swings, anxiety and depression.

By doing your best to avoid these foods and toxins, you'll be doing insulin a big-time favor and safeguarding your brain at the same time.

This section wouldn't be complete without mentioning all the havoc prescription drugs can trigger with your master hormone. This is something mainstream medicine and the pharma "drug pushers" don't want you to hear. When it comes to your brain, so-called anti-depressant and anxiety drugs can cause damage over time. There may be other ways to solve your challenges without prescriptions. I recommend you work with your health-care professional team to help limit the number of drugs you absolutely need to stay healthy. The fewer you are on... the less risk you're disrupting your insulin and impacting your brain health.

Lower Your Risk of Brain Cancer

43.2 Percent with Time-Stealing Exercise

From chapter 5, you should have a real good idea why exercise is such a key factor in keeping your insulin working at its best to ward off chronic diseases and conditions like heart disease, diabetes, cancer, Alzheimer's, obesity, blindness and many more. With multiple studies and experts supporting my analysis, I helped you understand how exercise (along with the proper diet) can help reverse metabolic syndrome (also known as "insulin resistance syndrome").

In one example, Dr. Michael Mosley, author of *Fast Exercise: The Simple Secret of High-Intensity Training*, reported on research that showed as little as three minutes of high-intensity interval training per week can produce significant

health benefits. Dr. Mosley himself was able to improve his insulin sensitivity by 24 percent by putting in a mere 12 minutes of intense exercise per week over a four week period.

If you want more evidence of how exercise can boost your master hormone, please go back and retake a look at chapter 5.

And this all helps your brain. Why? Well, I discussed earlier in this chapter how keeping insulin under control is key to the health of your brain. If your master hormone becomes dysfunctional, it can lead to a degeneration of brain cells and raise your risk of dementia. So, bolstering insulin function with exercise will, in turn, safeguard the overall health of your brain.

Just like fixing your master hormone can help you ward off other chronic diseases, it's no different with diseases of the brain. Here are a few examples where exercise comes into play:

- A study reported in the October 2013 issue of *Medicine and Science in Sports and Exercise* followed 111,266 runners and 42,136 walkers for 11.7 years. After adjusting for age, gender, race and other confounding variables, those who exercised ≥ 1.8 MET-hours/d (walking or jogging daily) had 43.2 percent lower brain cancer mortality rates compared to non-exercisers.²²²
- One study found that women over 65 who walked 30 minutes a day slowed their cognitive decline. When measuring mental acuity, the researchers found that the people who exercised appeared several years younger than those in the control group, who did not exercise at all.²²³
- Other research has shown that exercise can actually increase your brain size. One study used MRIs to compare brain sizes in people who exercised with those who did not. The exercise group saw significant results. Maintaining a larger brain is important because one of the side effects of aging is reduced brain volume, which may be implicated in cognitive decline.

By nurturing your master hormone with a proper diet and regular exercise, you can reward your brain with the protection and energy it deserves.

Tips and Tricks for a Restful Night's Sleep and Your Peace-of-Mind

I cannot stress enough the importance of a good night's sleep. Compelling research shows that the lack of sleep can disrupt both insulin and leptin resistance. As you already know, this increases your risk of other chronic illnesses like cancer and heart disease.

Well, it should not come as a surprise that getting the proper amount of sleep and rest is paramount to a healthy brain. Mental stress plus insomnia perpetuate a high output of cortisol, the adrenal gland hormone that helps calm your mind and body when there is mental or physical stress. During this stage of ongoing stress and high cortisol output, your sleep hormone, melatonin, will be suppressed, adding to your insomnia. These disruptions in hormone balance directly affect your ability to turn off your mind and keep your body from the deep-sleep stages you need to restore your energy.

It's also well-known that sleep can enhance your memory and help improve your performance when it comes to challenging skills. The process of brain growth known as neuroplasticity is believed to be the basis for your brain's capacity to control behavior, learning and memory. Getting the proper amount of sleep can be essential in nurturing this growth process.

Even though I already gave you these simple tips back in chapter 4, I think that sleep is so vital to your master hormone and your overall brain health, they warrant repeating:

- Plan a specific, consistent bedtime and a time to wake.
- Avoid alcohol, caffeine and spicy or sugary foods four to six hours before bedtime.
- Exercise during the day but not right before bedtime.
- Sleep on comfortable bedding, keep the room temperature comfortable and eliminate disturbing noise.
- Use your bed for sleep and sex, but not for eating, studying or watching TV.

- Drink chamomile tea before bedtime.
- Continue to dismiss negative thoughts as you are falling asleep; focus your mind on things in your life that feel good and on items you are thankful for.
- Take a nice, hot bath.
- Continually strive to find ways to reduce and relieve stress

If you're still have trouble sleeping, it won't hurt to simply supplement with melatonin. Start with a low dose of 0.5 to 1 mg at night. If needed, slowly increase the dose over the next two weeks to find what works, but don't exceed 15 mg each night.

Whatever you do, please don't underestimate the criticality of getting adequate sleep and rest to nurture insulin and safeguard your brain.

Fix Insulin to Ward Off Alzheimer's

In this chapter you should have learned how vital a balanced master hormone is, specifically to the health of your brain. If your master hormone is dysfunctional, an inadequate supply of insulin in your brain leads to degeneration of your brain cells. This, in turn, can contribute to dementia... and studies have shown that people with lower levels of insulin and insulin receptors in their brain often have Alzheimer's.²²⁴

By following the guidelines, tips and recommendations I've made in this chapter, you should have peace-of-mind knowing you're doing everything possible to safeguard your mind for years to come. Whatever you do, don't just throw up your hands in despair and accept dementia as part of the normal aging process. It's what many government and health agencies want you to do.

CHAPTER 7

How to Repair Your “Bioblasts” and Solve Your Energy Crisis

When was the last time you remember jumping out of bed first thing every morning filled with boundless energy ready to start your day?

Maybe you remember such mornings when you were younger... or perhaps you still have a few high-energy mornings... or maybe you've never experienced this unbelievable feeling.

Regardless, there could be many reasons why this is not happening as frequently as you'd like anymore. But I, for one, don't believe it should all just be tolerated as part of the normal aging process – just like from the previous chapter, I feel passionately that dementia and Alzheimer's don't need to be blindly accepted as part of aging as well.

You should be able to live well into a mature age and still maintain a good supply of rejuvenating energy. But there are some definite actions you need to start taking as soon as possible

How do our bodies produce and even store energy in the first place?

Where does all this energy come from that keeps people incredibly active into their 90s and beyond, and how can you tap into all this to boost yours as well? Certainly, regular exercise plays a key role. But by itself, exercise won't give you all the energy your body needs.

Deep within every single cell in your body are tiny structures

called mitochondria. These mitochondria are responsible for producing the energy your body needs to thrive and survive. When these tiny structures were originally discovered back in the 1890s, they were called “bioblasts,” an appropriate name as they are responsible for powering so many bodily functions.

Your master hormone plays a key role here on how well your cellular mitochondria perform their job.

Research has shown that the typical American diet with processed foods disrupts how mitochondria go about creating energy for you, and using that energy.

The diet we’ve been told to eat, and the foods we’re offered at the store and in almost every restaurant wreak havoc with your blood sugar. Not only does this throw insulin response into a tailspin, it depresses the critical energy activity of your mitochondria.

From a study I reviewed, conducted at John Hopkins University School of Medicine and reported in the *Proceedings of the National Academy of Sciences*, I uncovered some rather interesting info on a new viewpoint on how sugar causes your mitochondria to misbehave:²²⁵

- The processes used by mitochondria to produce energy are intricate and require precise placement of enzyme complexes within mitochondria membranes.
- Researchers found that an enzyme that helps move proteins around was higher in heart muscle mitochondria when diabetes caused blood sugar to be elevated.
- “We expected the enzyme levels to be different in diabetes, but we didn’t expect the large difference we saw,” said researcher Partha Banerjee.
- The enzyme examined in this study was expected to stay in the membrane with the enzyme complex. Instead, it had relocated into a different part of the mitochondria.
- With all these enzyme alterations, your mitochondria start to throw off excess heat and produce destructive free radicals that cause oxidative damage to your cells.

- Things now get in a vicious cycle where your liver goes into action to produce more antioxidants to fight off the damaging free radicals. By doing so, the liver also releases extra glucose that increases your blood sugar and causes even more energy-starving problems for your mitochondria.

So here we have a lot of evidence that when you fix insulin response you solve your energy crises. Your mitochondria won't degrade as fast because there will be fewer free radicals, and you won't have your liver spawning more glucose that spins everything into a dangerous cycle.

The Glycogen Key to Staying Slim and Energized

In chapter 5, I discussed the importance of reprogramming insulin through bursts of energy from interval-type exercise. In this way, your master hormone helps your body build more glycogen needed for the energy bursts. And that's important because it will not only help you get fit, it will help you get leaner as well. This is the result of training your body to burn glycogen (not fat) during your workouts and fat afterwards.

But this only works if done in tandem with a diet based on high-energy whole foods. You can exercise all you want, but without a proper diet you won't optimize the efficient use and storage of glycogen.

Your pancreas (and brain) produces insulin, a hormone that controls how your body uses and stores sugar. Excess sugar is stored by your body in the liver and muscles as glycogen. But if the glycogen is not used for energy needs, it is soon converted into body fat.

When your blood sugar levels stay high and the pancreas churns out insulin at a furious pace, your body runs the serious risk of creating the fixed fat deposits that make you obese. This buildup of body fat may take place before or after metabolic abnormalities arise that lead to type 2 diabetes or leave you mired in the more common condition known as metabolic

syndrome – all of which can lead to other chronic diseases.

It really starts with what you eat. When a meal or snack causes a rapid rise in blood sugar, your pancreas is quick to secrete insulin. If insulin is secreted too quickly into the bloodstream, it causes sugar to be too rapidly conveyed into the cells of your liver, muscle, brain and other organs. Consequently, when blood sugar drops precipitously as sugar leaves the blood, this abnormal cycle triggers hunger again, which can lead to a cycle of overeating.

Food Carbohydrates (gm)	Available Carb Per Serving	Glycemic Index
Baked Potato, Russet, baked without fat (1 small potato, 5oz)	30	85
Waffles, Aunt Jemima (1 piece)	13	76
Gatorade (1 cup)	15	78
Grapenuts (approx 1 cup Kraft)	22	75
Bread, whole wheat (1 slice)	13	71
Bread, white (1 slice)	14	73
Bagel (white, frozen)	35	72
Stuffing (approx 1 cup)	21	74
Graham wafers (approx 1 cup)	18	74
Shredded wheat (1 oz serving)	20	75
Total (1 oz serving General Mills)	22	76
Cream of Wheat (1 oz serving, instant, Nabisco)	30	74

Carbohydrates with glycemic levels above 70 are considered 'high-glycemic' and I recommend you only eat any of these in moderation or totally avoid them to keep your master hormone functioning at its ultimate best.

An excess intake of high-glycemic carbohydrate food spikes your blood sugar. Depending on your metabolic characteristics, this process can send blood sugar abnormally high and demand abnormal amounts of insulin secretion. That can lead to insulin resistance, a condition in which your master hormone loses its ability to maneuver sugar out of the blood and into cells for energy or into glycogen for storage.

Once insulin response gets headed down this road, your cells essentially become “starved” for the energy they need. You can get trapped into overeating due to constant hunger and you’ll feel fatigued from the lack of needed energy in your cells.

You already know how the right type of exercise can help you steer clear of this when you burn stored glycogen during your workout and fat afterwards. But there’s more good news in that along with exercise, the right high-energy foods can help repair your master hormone and give you the boundless energy you’re looking for.

I’ll have more coming up on delicious high-energy foods to eat (and those to avoid). But first, I think it’s important to understand a bit more about the organ that is your body’s main storage bin for the energy you need...

Nurture this Neglected Organ Into a Glycogen Powerhouse for Endless Energy

Don’t expect your doctor to spend much time telling you if your liver is healthy or how to keep it healthy. That’s because liver function is difficult to measure unless it is severely compromised (more than 90 percent). It’s also simply because conventional medicine does not spend a great deal of time discussing this critical organ.

Your liver is your primary organ of detoxification. It performs numerous critical functions that are vital for detoxification, preventing illness and preserving your overall health.

Among the multitude of tasks your liver performs, it...

- Stores sugar as glycogen and regulates blood sugar levels.
- Breaks down fat and produces cholesterol.
- Manufactures clotting factors, blood proteins (i.e., hemoglobin) and precursor molecules required to make new red blood cells.
- Recycles red blood cells.
- Regulates many molecules and enzymes involved in protein metabolism.
- Produces bile.
- Regulates a wide range of hormones.
- Neutralizes free radicals with antioxidants such as glutathione, ubiquinone and catalases.
- Stores iron, copper and vitamins A, D, E, K and B12.

Since we're talking about energy in this section, you can see how important your liver is because it stores glycogen. It also neutralizes free radicals that can steal your energy and have all sorts of ill effects on your overall health.

But it really goes beyond all this because your master hormone plays such a key role in the health of your liver. If your master hormone is messed up and triggers insulin resistance, all sorts of bad things can happen to your liver.

The build-up of excess fat in your liver can transform this valuable organ and lead to dire consequences. Your liver is basically the traffic cop for the building blocks of fat, but to function best, it needs to hold onto as little fat as possible.²²⁶

The problem can occur through a combination of fat-storing when your liver...²²⁷

- Starts stockpiling triglycerides (from dietary fat).
- Synthesizes fat itself.
- Stores fat from fat-storing adipocyte cells when they continually release their content.

All three of these sources can be prevalent in fatty liver disease. So, what’s the key behind all this fat-storing? You shouldn’t be all that surprised when I tell you the main culprit here is producing too much insulin. One hepatologist at the Indiana University School of Medicine in Indianapolis got right to the point when she concluded that, “of the many metabolic abnormalities that could drive accumulation of fat in the liver, insulin resistance seems key.”

This all happens when your cells become less resistant to your master hormone, prompting fat buildup in your liver. Insulin normally triggers adipocytes to halt release of fatty acids. But as shown in research, insulin-resistant adipocytes continue dumping fatty acids into your blood. Under normal circumstances your liver could rid itself of some fat by exporting triglycerides. But with insulin resistance, your liver is prompted to produce more triglycerides, effectively overwhelming the disposal process.

The final straw here is that your liver is not only a vital detox organ, it’s also critically important in storing glycogen for energy. If your master hormone is not functioning on all cylinders and you become insulin resistant, you not only can compromise your energy needs, you can end up with fatty liver disease as well.

The culprits

The liver stores excess fat in fatty liver disease, and these five contributors help determine how much.



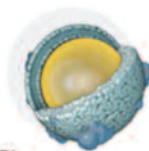
Diet
Fats that we eat can travel to the liver, which may stash some of them.



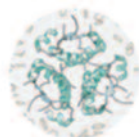
Adipocytes
These fat-storage cells release fatty acids, which can travel to the liver.



Fat producer
In fatty liver disease, the liver can turn up its production of fatty acids.



VLDL
The liver sheds some—but not enough—excess fat by producing these particles.



Insulin resistance
This condition causes adipocytes to spill fats and the liver to make them.

Fixing your master hormone is vital in maintaining a healthy liver and avoiding fatty liver disease.

Six Signs and Symptoms of a Stressed Liver

Most people believe their doctors can test the blood for liver function; they are mistaken. Blood tests for the liver don't really show its function; they reflect the severity of damage or disease. Therefore, they are actually late at uncovering disease.

These tests are known as AST (SGOT), ALT (SGPT), alkaline phosphatase, LDH, bilirubin and GGT. The problem with these tests is when they show elevated levels, it does not mean your liver is beginning to slow down; it means your liver has already been damaged or is nearing total failure.

Initially, when your liver falters, you don't experience an ache or have skin that becomes yellow with jaundice. Instead, you usually experience more subtle indicators of sluggish liver function. Remember that blood tests can't reveal a faltering liver early in the process because there are no tests able to detect this.

Here are signs and symptoms for you to be watchful of indicating a liver starting to have trouble:

1. Increases in (bad) LDL cholesterol, decreases in (good) HDL cholesterol and elevation of triglycerides. These are all linked to a slowdown in the liver's ability to metabolize fats. The result is usually high blood pressure or cardiovascular disease and may lead eventually to a heart attack or stroke. It is also accompanied by sugar cravings, hypoglycemia, diabetes mellitus and insulin resistance. The classic example is what is seen and known in conventional medicine as "fatty liver disease." It is the most common cause of chronic liver disease in the United States, striking up to 20 percent of adults. Over time, this enlarged fatty liver can develop into cirrhosis, liver failure or even liver cancer. However, that's not what I'm concerned about for

this discussion. What is more worrisome for most of us is the subclinical liver disease that is much more widespread.

Many people have a liver that's slowing and contributing to other diseases, yet they never suspect their liver is in trouble.

2. External signs of slowing liver function, including: A coated tongue, bad breath, red palms and soles, a flushed facial appearance or excessive facial blood vessels, acne or rosacea, yellowish conjunctivae on the eyes, brownish blemishes on the skin (aka liver spots), and itching skin, even without a rash.
3. Digestive problems that include gallstones, gallbladder disease, difficulties with fatty foods or alcohol, indigestion, reflux, nausea, constipation and irritable bowel syndrome.
4. Depressed mood, anger, irritability, "foggy brain," overheating and headaches with nausea.
5. Immune dysfunction, including: Allergies, hay fever, asthma, hives, sensitivities to chemicals and many foods, autoimmune diseases, chronic fatigue syndrome, fibromyalgia, recurrent viral infections, and frequent bacterial or parasitic infections.
6. Menopausal symptoms or premenstrual syndrome symptoms that are unusually severe; side effects from hormone replacement therapy.

If you have any of these signs or symptoms, work closely with your healthcare professional to rule out liver and other possible issues. Remember, typical blood tests administered to check your liver are almost too late in their diagnosis. When they show elevated levels your liver has already been damaged or is near total failure. It's better to be proactive and watch out for the early signs I listed above.

Source: <http://easyhealthoptions.com/better-liver-health-part-2/>

Three Groups of Delicious High-Energy Foods to Supercharge Your Batteries and Safeguard Your Master Hormone

Now that you know just how important insulin is to your energy needs and to helping to reduce undue fatigue, what are some of things you can do to better nurture it?

Three things come to mind right away... diet, exercise and rest. You've heard these all before in previous sections so this is not anything really new. I'll get to specifics on certain "energy-foods" you can eat real soon. But first, if you want more details on my recommendations for the best exercise to burn glycogen, increase the number of mitochondria in your cells, boost your energy levels and keep your master hormone in shape, please go back and review chapter 5.

Proper sleep also helps recharge your batteries so you'll have added energy when you wake up in the morning. Sleep does more than remedy mental fatigue – it allows your body the opportunity to repair and synchronizes its circadian rhythms for optimal vitality. Check back in chapter 4 for more details and my many tips on how to get a good night's sleep.

When it comes to high-energy foods to consume that not only boost your energy but protect insulin, here are a few examples:

- **Add some resveratrol to your diet** – This potent antioxidant is found in red grape skins, raw cocoa, pomegranate, raspberries, mulberries and red wine.²²⁸ It is a natural cancer fighter and helps ward off insulin resistance. Resveratrol has also been shown to stimulate production of SIRT1, a protein that speeds up your cell's energy production centers of mitochondria. It recharges these cellular powerhouses essential in keeping your energy levels high.^{229, 230, 231}
- **Eat lean protein, lots of raw vegetables, plenty of fresh brightly colored fruits and berries and drink ample amounts of fresh, filtered water** – These should all be part

of your daily diet to help maintain and boost your energy reserves.²³² Plus, all these foods help keep your master hormone in tip-top shape as well.

- **Choose from other energy foods including nutrient-dense sources our ancestors thrived on** – Meat (grass-fed organic), fish (wild caught), raw nuts and seeds, and starchy plants like sweet potatoes help protect your master hormone.

It's the same old story on what general foods to avoid. You've heard me talk about this before. But not only will processed foods, excess sugars, artificial sweeteners, grain-based foods and other high-glycemic carbs raise havoc with your master hormone, they generate glucose spikes and crashes. This in turn fuels inflammation and depresses the energy activity of your mitochondria.

Avoid as many of these types of foods as you can to keep your energy level high by taking care of your insulin.

Natural Energy Herbs and Supplements

Understanding how the body creates energy helps determine which supplements best suit those needs.

For your adrenal system, I recommend (these botanicals will also increase sexual energy):

- Korean ginseng
- Medicinal mushroom cordyceps
- B vitamins

When you eat a meal like lunch, the body extracts necessary raw materials from the food in the digestive tract and then the mitochondria convert these materials into cellular energy. This could be described as your energy pathway.

To increase your mitochondrial energy, choose herbs and supplements like:

- Astragalus
- Siberian ginseng

- Medicinal mushrooms coriolus
- Shitake and maitake
- Acetyl l-carnitine

To support circulation, consider:

- Salvia miltiorrhiza
- Nattokinase
- Hawthorn
- Gingko
- Medicinal mushrooms: reishi and cordyceps

Will these supplements produce the same rush as an energy drink or a double espresso? No, they won't. However, the idea is to maintain constant, stable energy, rather than provoke peaks and crashes. Ultimately, healthy energy metabolism means you don't need the extra stimulants to begin with. You simply allow your body to function efficiently.

CHAPTER 8

Reset Your Hunger Signals to Shed Those Unwanted Pounds

I've witnessed it first-hand so many times in my practice I've lost count.

Many people have come to me well beyond the point of frustration. They feel they're doing their best to eat healthy meals, only to find they're hungry again shortly after getting up from the table.

Are you living this frustration as well, where you're eating what you consider to be good satisfying meals, only to have your body tell you to eat even more... to overindulge?

And even more annoying – do you find yourself avoiding that dreaded mirror because you no longer fit into your favorite clothes?

I truly feel your anguish and disappointment with all this.

Perhaps you have even tried a few of the seemingly endless diet plans out there and still haven't been able to slim down and have the energy you want.

Well, I've reviewed many of these plans and find myself as confused as you are by the majority of them. But I do know why most of them simply don't work – they're telling you to eat the wrong foods (like processed grains, wheats and low-fat foods for example). The very foods most of these plans tell you to eat are sending your brain the wrong signals, fueling your hunger cravings and desire to eat more, and upsetting your master

hormone balance. The end results are your waistline and belly continue to expand.

The very reason I wrote this book was to help you feel better about yourself... to work around issues just like this. If you're overweight, even the slightest amount, you're not going to feel good about yourself.

The exciting news is there is a solution here that will wipe away your frustration and help you get slim and trim. I guess there could be a few downsides to all this. One, you'll have to go out and buy all new clothes to fit your re-sculptured lean body. Two, you'll have to put up with friends and family hounding you as to what you changed to look so young and vibrant again.

So, what are your next steps?

The first step toward a new YOU is to better understand the complex hunger systems at work inside your body. These complex systems have a big-time influence on your desire to eat, hunger cravings and food satisfaction. If these complex systems become imbalanced, you can muster up all the will-power possible and you'll still not be able to shed those pounds. But even though these hunger systems are complex, the solution to balancing them involves only one simple thing – fix insulin sensitivity and just watch the weight fly off.

Stay Slim by Repairing Your Satisfaction Signal

Earlier in chapter 1, you were exposed to some pretty sobering statistics on the obesity epidemic in the U.S. Some of the CDC facts included: 34.9 percent or about 78.6 million U.S. adults are obese and the estimated medical cost of obesity is a staggering \$147 billion per year.²³³

But these are just sensationalized stats the government wants you to know about to paint a ridiculously daunting picture. Do these stats really matter to you or even help you out? I certainly,

Are You “Doping” and Don’t Even Realize it?

If some of your food choices include muffins, bagels, breakfast cereals and sandwiches, you’ve been consuming an opiate without even realizing it. As with many of the dark and hidden issues surrounding modern wheat, this is the effect of the *gliadin* protein found in wheat.

Gliadin is digested via stomach acid and pancreatic enzymes to a collection of polypeptides (small proteins) called *exorphins*, or exogenously-derived morphine-like compounds. And when it comes to wheat, wheat-derived exorphins bind to the opiate receptors of your brain. Different wheat exorphins, such as the A5 fraction, differ in their binding potency, but as a whole, wheat exorphins exert an opiate-like effect.

Now for reasons not completely understood, wheat exorphins do not provide any sort of pain relief or a “high” like other opiates (heroin, Oxycontin, morphine, etc.). So, eating an extra muffin or bagel at breakfast is not going to make you feel euphoric.

What these wheat exorphins do cause is addictive behavior and stimulation. If you consume wheat, you’ll increase your calorie consumption by about 440 calories per day. . . every single day. Not the best way to stay slim and trim, and protect your overall vitality.

I’m sure you’re well aware of how the tobacco industry for years boosted the nicotine in cigarettes to increase the addictive potential. Well, Big Food has been working full-time adding more and more wheat to every conceivable processed food out there. Take a closer look at processed food products and you’ll see how most of them contain some sort of wheat. Wheat is in nearly all breakfast cereals, granola bars, canned tomato soup, powdered instant soups, taco seasoning and licorice to name just a few.

You may not feel like you’re “doping” when you eat processed foods laced with wheat. But in a sense, you are. Wheat exorphins exert an opiate-like effect in your brain. Your best bet to take better control of your health and to shed those unwanted pounds is to totally avoid processed and wheat-based foods.

Source: <http://www.wheatbellyblog.com/2012/07/doped/>

for one, feel they're only meant to further frustrate you.

What do I mean by this?

I believe by flooding you with these types of statistics, the government only wants you to feel like giving up when it comes to eating right and losing weight. By getting frustrated, you'll continue eating the bad food you're already eating. Then your doctor and Big Pharma can continue "blinding" you with their quick money-making fixes that deal with obesity symptoms and not the root of the problem.

It's this root of the problem that I'm totally focused on... the total solution to help you start feeling better about yourself and your new slim body.

Instead of getting dragged down and just becoming another obesity statistic like the government and Big Pharma would like you to do, let's mine down deeper into the root of the problem. First thing we're going to take a look at is what drives your hunger cravings.

There's a particular hormone, called leptin. You may remember some of my earlier discussion on this. The interesting thing with leptin is how much power it has over your hunger cravings. Leptin signals your brain as far as:

1. When to eat...
2. How much to eat...
3. When to STOP eating.

Leptin also "advises" your brain on what to do with the available energy.

As important as leptin is in signaling your brain that your hunger has been or has not been satisfied, that is only the tip of the iceberg.

If you're insulin resistant and your master hormone has become dysfunctional, there's a real good chance you are leptin resistant as well. When this happens, your brain basically ignores leptin's signaling. People who have a leptin imbalance are almost never satisfied. Diminished hormone levels basically tell your body

you're in the middle of a famine and you need to eat. This results in chronic hunger, over-indulging and the inability to efficiently burn fat. This can drag you down the road toward obesity.

The best way I know of to keep your leptin hormone in check is to fix insulin sensitivity. When you eat high-glycemic carbohydrate foods, it causes a spike in your blood sugar as your pancreas rapidly secretes insulin. When this quick secretion occurs, it causes sugar to be too rapidly conveyed into the cells of your liver, muscle, brain and other organs. As a consequence, when your blood sugar drops abruptly as sugar leaves your blood, this abnormal cycle triggers hunger again and can lead to a vicious cycle of overeating.

You already know about the many ways to fix your master hormone I've reviewed in this book including: proper diet, exercise and rest. I'll have even more coming up on some additional steps you can take to further boost insulin sensitivity and shed those unwanted pounds.

Ditch These Toxic Food Chemicals to Curb Your Hunger Hormones

There is a word used to describe the feeling when you've had enough to eat... that you feel satisfied. "Satiety" is the term used to define your body's sensation that it has been refueled sufficiently.

Like so many of your biological functions, satiety is governed by hormones. Leptin is obviously one of those hormones, as it signals your brain when you're satisfied and to stop eating. And if your master hormone is faulty, your leptin hormone will not be as effective and its signaling will be ignored by your brain.

There's another hormone that comes into play with all this – and that's ghrelin. While leptin signals your brain that you're satisfied, ghrelin sends the opposite message. Ghrelin tells your brain that you are indeed hungry.

Ideally, leptin and ghrelin work as a team after you've eaten a meal – your ghrelin levels drop and your leptin increases. So,

in the perfect world, you're no longer hungry (ghrelin signal) and you feel full and satisfied (leptin signal).

However, in today's reality of processed foods and sugary snacks, both these hormone signals can become imbalanced and their receptors desensitized. A great illustration I like to use is when you start eating some Doritos® and before you know it, you end up gorging yourself on the whole bag. In very simple terms, your brain does not receive a proper leptin signal that you're full, and your ghrelin never tells your brain that you're no longer hungry. The end result is you overindulge.

Doritos® cause a spike in your blood sugar. When this leads to insulin resistance, your leptin and ghrelin hormones become even more unreliable. Your body begins to get trained to crave high-glycemic carbs and sugary sweets. If you're cornered into this unhealthy eating habit, there should be little wonder why you can't take off the pounds.



Doritos® are just one of many examples of processed foods that can cause a spike in your blood sugar and short-circuit your leptin and ghrelin hormones. Doritos® also still contain MSG, an appetite stimulant that can cause you to still be hungry after you eat this processed snack. Other foods containing MSG include Lipton® Onion Soup Mix and Campbell's® Chicken Noodle Soup.

Here are some common food additives to avoid if you want to keep your master hormone, as well as leptin and ghrelin hormones functioning at their best. Two of these should not come as a total surprise as I reviewed them earlier in this book:

■ **High-fructose corn syrup (HFCS)** – You know how this

chemical sweetener (found in regular sodas and other foods) can attack your master hormone. And by now, you're smart enough to not just take my word for it.

The results of a Mayo Clinic study warn that type 2 diabetes, cardiovascular disease and insulin resistance are direct negative effects from HFCS.^{234, 235} And when it comes to obesity, a study presented at the American Society of Nephrology's 42nd Annual Meeting found that the rate of obesity has increased sharply since the development of HFCS and that the prevalence of HFCS in processed foods may have something to do with it.²³⁶ This is not surprising in the least because of what HFCS does to your satiety hormones...

- HFCS does not signal your leptin to rise – Your satiety (satisfaction) signals are greatly reduced. By raising your triglycerides, HFCS reduces the amount of leptin able to cross your blood-brain barrier.
- HFCS pretty much leaves your ghrelin hormone left unchecked – so you remain hungry.
- HFCS causes increases in your insulin levels. HFCS triggers interference between leptin and your hypothalamus. Your pleasure signals are not satisfied so your brain senses starvation and prompts you to eat even more.

■ **Monosodium glutamate (MSG)** – This appetite stimulator causes hunger soon after you consume it. MSG is disguised in hydrolyzed protein, sodium and calcium caseinate, yeast extracts, and often in flavorings and seasonings. In an animal study where MSG was given in doses relative to human doses, the results yielded a 40 percent weight increase on average compared to controls. As a proven appetite stimulator, MSG is disguised as a preservative to keep you eating and putting on the pounds.²³⁷

In another study I uncovered, researchers noted that MSG consumption may cause leptin resistance.²³⁸ Leptin resistance occurs when your body cannot properly respond to leptin's

signaling. This in turn means your body ignores the messages telling it to stop eating and burn fat – so you remain hungry and continue storing more fat. And to add insult to injury, studies have shown that MSG can upset your master hormone as this dietary additive induces markers of insulin resistance.²³⁹

At this point you may be thinking “MSG?” Isn’t that something that used to be found mostly in Asian-American food and has been banned from our food supply years ago? Most people probably think this is the case and feel this is dated information. But nothing can be further from the truth. In fact, the FDA stills lists MSG as GRAS (Generally Recognized as Safe). Here are just some of the foods that still contain this nasty food additive: Certain chip snacks (like Doritos®, Pringles®), frozen dinners, cold cuts, gravies, ranch dressing (like Hidden Valley®), KFC® Fried Chicken, and more.^{240, 241}

The trade name of MSG is sodium hydrogen glutamate. Because MSG is the sodium salt of the amino acid glutamic acid, whenever you find glutamic acid listed on a food label, the food contains MSG. MSG may also be listed as monopotassium glutamate or simply glutamate.²⁴²

And for those food producers who did remove MSG from their products, many simply substituted Aspartame which to me is worst of the worst when it comes to causing problems with your master hormone. Avoiding processed and fast foods should be your first step in steering clear of these toxic additives.

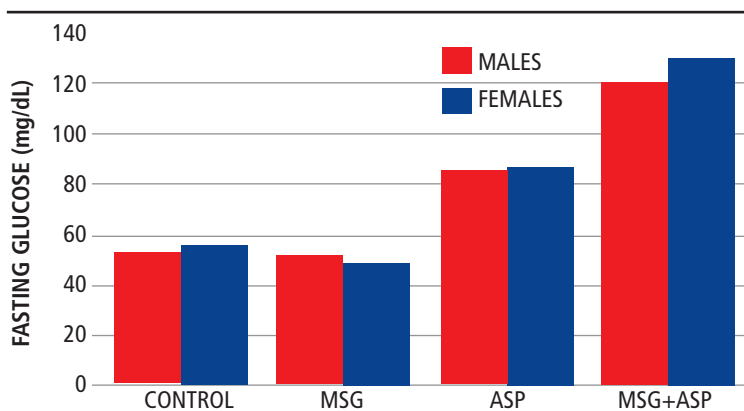
- **Aspartame** – By now, you’re well aware of how I feel about this chemical sweetener predominantly found in diet soft drinks. I’m bringing it up again here because of how it can cause you to gain weight. The two amino acids (phenylalanine and aspartic acid) that make up 90 percent of Aspartame are known to stimulate not only the rapid release of insulin, but leptin as well. Both leptin and your master hormone are intricately engaged with satiety and fat storage. Even though you’re not consuming sugar, Aspartame can spike your insulin, upset your leptin levels and trigger weight gain.

When it comes to insulin and what Aspartame can do, it goes well beyond just weight gain. Here are two studies I reviewed earlier in this book that show us the effects of Aspartame:

As reported in the *European Journal of Nutrition* (2014) – A seven-year study using more than 2,000 Japanese men clearly showed that diet soda drinkers had a significantly higher incidence of diabetes when compared to the controls.²⁴³

French researchers reported that after 14 years observing 66,188 women, they found that even at equal consumption rates, women who consumed diet soda had more new cases of diabetes than regular soda drinkers.

As important as it is to avoid any one of these three additives, imagine the effects on your master hormone if you were consuming more than one. Well, a unique study provides us with startling evidence of what can happen when MSG and Aspartame work in combination. Aspartame alone can cause an increase in your blood glucose levels and reduce insulin sensitivity. When combined with MSG, the two additives trigger weight gain and elevated fasting glucose levels.²⁴⁴



When MSG and Aspartame were combined ("MSG+ASP" above) in this research study published in *Nutrition and Metabolism* (London), fasting glucose levels spiked even higher. Just look how your blood sugar could surge when you eat foods like Doritos® and Kentucky Fried Chicken® loaded with MSG, and drink diet sodas spiked with Aspartame (ASP). I strongly recommend you avoid both of these food additives to maintain a healthy master hormone.

So, please, don't feel you're out of the water if you consume only two or even just one of these. It's critical to insulin function that you avoid them all to help prevent weight gain and to protect yourself against chronic illnesses and conditions.

Make These Five Fantastic Foods Your Secret Weapon

One of the best ways I know of to increase satiety is to limit calorie-dense foods like fatty meats, cheeses and fried foods to name a few. While foods like these deliver many calories, they don't leave you satisfied for long. Cravings return shortly.

When you eat higher-volumes of low-calorie foods, you fill up on fiber-rich and water-filled foods that help you stay full and energized. In effect, you gain an edge on satiety. Foods like fruits, vegetables, sprouted grains, beans and lean protein are great examples of low-calorie foods. These foods are nutrient-rich and help nurture your master hormone.

In addition to focusing in on low-calorie, nutrient-rich foods, I recommend you eat foods with a low glycemic index. Now, not surprising, many of the low-calorie foods are the same ones that are also low glycemic. Examples of low glycemic foods include: Greens, broccoli, cauliflower, celery, cucumber, sprouted whole grains, raw nuts and seeds.

So why is the glycemic index so important?

The glycemic index measures how rapidly your body digests and processes glucose from food. This index measures the amount of time specific foods take to break down into glucose. The faster they're metabolized, the quicker your blood sugar ticks up. Foods that are low on the glycemic index scale won't cause your blood sugar to spike and then crash – something you want to avoid to protect insulin, reduce cravings and keep fat storage to a minimum.

To find out more about foods that are low on the glycemic index, here's the perfect place for you to check out:
www.glycemicindex.com.

Here are some examples of foods and nutrients that help balance your master hormone, satisfy your hunger cravings and help you keep the weight off:

- **Ginger** – This spice, which comes from the Zingiberacea plant family, has been shown by researchers to improve insulin sensitivity and to reduce fasting plasma glucose. In addition, ginger helps reduce the feelings of hunger suggesting a role in weight management.^{245, 246}
- **Black pepper** – This common flavoring found in every kitchen can be a potent secret weapon in weight loss. Evidence supporting this can be found in a study published in the *Journal of Agricultural and Food Chemistry*. Researchers found that piperine, a spicy active ingredient in pepper, signals your body not to produce fat cells.²⁴⁷ Black pepper also strengthens your spleen which in turn helps protect your master hormone.
- **Green tea** – Green tea is a phenomenal beverage because it stimulates your metabolism which can help you shed some pounds. Green tea possesses potent anticancer properties as well. Green tea has also demonstrated that it can reduce hyperglycemia and thereby strengthens insulin sensitivity.
- **Ayurvedic herbs** – Ayurvedic herbs help support a healthy glucose response, reduce cravings and promote optimal metabolism. One example, Tulsi (Holy Basil) reduces stress and inflammation, while supporting your immunity and healthy blood sugar balance.
- **Fenugreek** – This fibrous plant is commonly found in Indian food and drink. Its seeds contain fiber and protein shown to help control glucose levels. Studies provide us with evidence that fenugreek fiber significantly increases your satiety, improves your blood sugar control and lowers your triglyceride levels.

These are only a few examples of specific foods and nutrients that can help satisfy your hunger (satiety) by boosting your master hormone. By focusing on foods that are low on the glycemic index and high in satiety, you can keep your blood sugar in balance, stay energized and start shedding those unwanted pounds.

The Satiety Index

Famed Australian researcher, Dr. Susanne Holt, developed what is called the "Satiety Index." This index was developed by having students eat 240-calorie portions of specific foods in the morning. They then rated their feelings of hunger every 15 minutes. Over the next two hours, students were allowed to go to a buffet table and eat as much as they liked while being observed by researchers.

Using white bread as they baseline of 100, 38 different foods were scored that were given to the students. Foods scoring higher than 100 were judged to be more satisfying than the baseline white bread. Those foods scoring less than 100 were less satisfying. Here are all 38 foods involved in the study and their scores:

The Satiety Index

All are compared to white bread, ranked as "100"

Each food is rated by how well it satisfied their hunger.

Tip: If you want to lose weight, avoid the LOWER numbers!

Bakery Products

Croissant	47%
Cake	65%
Doughnuts	68%
Cookies	120%
Crackers	127%

Snacks and Confectionary

Mars candy bar	70%
Peanuts	84%
Yogurt	88%
Crisps	91%

Carbohydrate Rich Foods

White bread	100%
French fries	116%
White pasta	119%
Brown rice	132%
White rice	138%
Grain bread	154%
Whole meal bread	157%
Brown pasta	188%
Potatoes	323%

Snacks Continued

Ice cream	96%
Jellybeans	118%
Popcorn	154%

Breakfast Cereals

Muesli	100%
Sustain	112%
Special K	116%
Cornflakes	118%
Honeysmacks	132%
All Bran	151%
Porridge/Oatmeal	209%

Protein Rich Foods

Lentils	133%
Cheese	146%
Eggs	150%
Baked beans	168%
Beef	176%
Fish	225%

Fruits

Bananas	118%
Grapes	162%
Apples	197%
Oranges	202%

This research was completed back in the late 1990s. But it does provide some interesting info on foods that satisfy you more than others. Combined with healthy, low glycemic foods, you can find the best of both worlds. For example, raw oranges (from www.glycemicindex.com) have a glycemic index as low as 31, and a Satiety Index value of 202 percent (from above). The low glycemic value (31) will help protect your master hormone while the high Satiety Index value (202 percent) will help satisfy your hunger. A win-win scenario.

Source: <http://www.diabetesnet.com/food-diabetes/satiety-index>

Sleep Like a Baby Every Night to Stay Lean

There is a serious sleep disorder called obstructive sleep apnea (OSA). This disorder could affect insulin, your master hormone and your leptin and ghrelin hormones as well. In other words, this condition could have a major impact on your overall health if left unchecked.

Many people have sleep apnea and don't even realize it. OSA is basically very irregular breathing while you sleep, and can lead to serious health issues, even death.²⁴⁸

If you're trying to lose weight and have sleep apnea, you'll face an almost insurmountable uphill battle. Being overweight causes fatty deposits in your neck that obstruct your breathing at night. In turn, sleep apnea impairs your body's endocrine systems – causing the release of ghrelin. So, this in effect signals your brain that you're always hungry and certainly doesn't help you shed any weight.

And when it comes to your master hormone, sleep apnea is very common among people with the type 2 diabetes. In fact, up to 80 percent of diabetics have some form of OSA.

Signs of sleep apnea include:

- Snoring – but this is not always an indicator by itself.
- Waking up tired – or waking numerous times during the night.
- Breathing interruptions – can last 10-30 seconds followed by a snort when breathing resumes.

Now, these simple signs may or may not mean you have OSA. But if you have any combination of these signs, I advise you see a health professional as soon as possible to get tested. If you truly suffer from sleep apnea, this is a very serious issue and must be dealt with right away to ensure your overall health.

Even if you don't have any of the symptoms associated with sleep apnea, you're not entirely out of the woods. From previous chapters, you know how I emphasized how important it is to insulin and overall health to get a good night's sleep.

Getting six or fewer hours of sleep per night is linked with diabetes and obesity. However, I won't insult your intelligence by expecting you to just take my word for it on this subject. You already know how the lack of sleep can upset your master hormone. In addition, the lack of sleep and link to obesity was studied and published in *The Journal of Clinical Endocrinology & Metabolism (JCEM)* and in a Mayo Clinic study as well:

- *JCEM* article showed that hunger is increased by the lack of

sleep when your brain's appetite-control center becomes active.

- Mayo Clinic study revealed that if you sleep about 80 minutes less than normal, you're at risk for consuming about 550 more calories the very next day.
- Your leptin and ghrelin hormones are believed to be responsible for this effect.

So, sleep is vital for you to maintain a functional master hormone... is key to help you stay slim... is critical to protect you against chronic disease and conditions. Whatever you do, don't cut corners when it comes to getting a restful night of sleep.

Even though you've already seen these simple tips and tricks on getting a restful sleep in both chapters 4 and 6, proper sleep is so very important to your master hormone and weight control that here they are once again:

- Plan a specific, consistent bedtime and a time to wake.
- Avoid alcohol, caffeine and spicy or sugary foods four to six hours before bedtime.
- Exercise during the day but not right before bedtime.
- Sleep on comfortable bedding, keep the room temperature comfortable and eliminate disturbing noise.
- Use your bed for sleep and sex, but not for eating, studying or watching TV.
- Drink chamomile tea before bedtime.
- Continue to dismiss negative thoughts as you are falling asleep; focus your mind on things in your life that feel good and on items you are thankful for.
- Take a nice, hot bath.
- Continually strive to find ways to reduce and relieve stress.

If you still have trouble sleeping, it won't hurt to simply supplement with melatonin. Start with a low dose of 0.5 to 1 mg at night. If needed, slowly increase the dose over the next two

weeks to find what works, but don't exceed 15 mg each night. Whatever you do, don't give up until you've found the perfect formula for blissful sleep every night.

Cleanse and Detox to Balance Your Master Hormone and Help Curb Food Addictions

In chapter 4, I provided you with reasons why naturally cleansing and detoxifying your system are so important to the health of your master hormone. At that point in the book, I recommended you take these steps to help remove as many risky chemicals from your body as possible. You could be faced with nasty chemicals and their metabolites that have lodged themselves in your body over the years. And these toxic chemicals disrupt insulin, increasing your risk of cancer and other chronic disease.

But there's another reason for you to naturally cleanse and detox your system – and that's to help curb your cravings. See, liquid cleansing and detoxification of your body toxins and cleansing your mind from toxic emotions helps your cells become more sensitive to insulin. In turn, it helps you curb any unhealthy food addictions you might have.

Once again, I encourage you to download a copy of my e-book, *Doctor's Inside Secrets for Natural Cleansing and Detoxification*. This e-book has all the specifics you'll need to know about this cleansing process. And since I believe the e-book is such an important complement to this book that you purchased, for a limited time it's available for FREE at this link: www.easyhealthdetox.com. So, please download *Doctor's Inside Secrets for Natural Cleansing and Detoxification* to get started right away. Not available in print.

Early Morning Light – Can it Help You Stay Lean and Mean?

A study published in *PLoS* (2014) provides evidence that exposure to early morning light can help keep you lean. In this study, researchers at Northwestern found that early morning light exposure is associated with lower BMI (body mass index) when compared to light exposure later in the day.

The earlier the light exposure – the lower an individual's BMI. Whereas, the later the light exposure is in the day – the higher the BMI.

Light exposure is one of the most powerful ways to influence your circadian rhythms. These rhythms are your internal biological clocks that regulate numerous bodily processes, particularly hormone function.

Researchers concluded that 20-30 minutes of bright light exposure between 8 a.m. and noon is enough to impact your BMI. This study demonstrated that the influence of light exposure affects your BMI independent of diet, exercise, sleep patterns, or age. Overall, light exposure is an intriguing example of an additional element to consider to help balance your hormones for optimal weight control.

Sources:

<http://easyhealthoptions.com/new-insight-lose-weight/>

Reid KJ, et al. (2014), "Timing and Intensity of Light Correlate with Body Weight in Adults." *PLoS ONE* 9(4): e92251.

doi:10.1371/journal.pone.0092251.

CHAPTER 9

Renew Your Cells with Insulin's DNA Secret for a Long and Active Life

When you think of DNA (deoxyribonucleic acid), most likely the first thing that comes to mind is your genetic makeup – something given to you from your biological parents that is permanent and unchangeable.

For decades scientists were convinced that once you were conceived, your DNA could not be altered in any way. New advances in genetic technology now show us this is not entirely the case.

The real beauty and strength of being who you are is your genetic makeup. And despite what was earlier believed, you actually have the power to influence how your genes are expressed.

You can decide how long you live and what chronic diseases affect you by the actions you take and what you put into your body.

In fact, there's an entire new field of research devoted to showing us how gene expression can be influenced. Some of these new advances have provided us with phenomenal ways to safeguard your master hormone and prevent chronic disease.

In this chapter, together we'll explore how certain factors can impact your DNA and what you can do about it. I'll show you how a healthy master hormone can help your cells make the necessary repairs to better protect you against chronic conditions and boost your overall longevity. And I can tell you that both conventional medicine and Big Pharma don't want you to know all these details.

Five Choice Foods and Nutrients that Bulletproof Your DNA

The genes you inherit from your parents strongly affect your health and longevity. This everyone knows.

The fascinating news is that research shows that natural nutrients in certain foods send signals to your DNA. These signals in turn optimize your cellular function to help keep illnesses at bay.

These discoveries are all the more intriguing because scientists once believed that your genetic blueprint “given” to you from your parents was something that could never be modified. This was to bluntly say that your DNA controlled your future and there wasn’t anything you could do about it.

A remarkable new field of genetic research, epigenetics, is emerging to show how your gene expressions can be influenced and altered for better or worse, based on internal and external triggers. Far-reaching advancements in epigenetics are revealing how your environment, diet, lifestyle and even emotions can have just as powerful an impact on gene function as biological lineage.

Patients in my clinic have found all this pretty mind-boggling to say the least. I’ve assured them this is by no means “science fiction” but something here and now that can have a big-time influence on their overall health.

For example: The University of Oxford (often referred to as “Oxford University”), Oxford, England, is one of the oldest and most prestigious universities in the English-speaking world. The university has a dedicated research group of highly intelligent people focused on Developmental Epigenetics.

And when it comes to your master hormone, researchers at the University of Oxford and King’s College London have discovered the regulatory influence of a specific gene (called KLF14) on other genes found within fat cells in your body. KLF14 has long been linked to metabolic conditions such as type 2 diabetes and elevated cholesterol.

The study published in *Nature Genetics* confirmed that KLF14

behaves as a regulator of many metabolic traits including:²⁴⁹

- Blood glucose levels
- Fat metabolism
- Cholesterol metabolism

By positively influencing the KLF14 gene's function, we could better control various metabolic traits. This could in turn lead to improved insulin function and better fat metabolism. And you already are well aware of the criticality of insulin when it comes to avoiding chronic disease and conditions.

Well, research shows us that nutrients found in certain foods and botanicals send signals to your DNA, bulletproofing the health of your cellular function. A few examples of these important foods and nutrients include:²⁵⁰

- Green tea
- Curcumin
- Cauliflower
- Broccoli (and other cruciferous vegetables)
- Vitamin D (which “talks” to your genes)

Do these foods and nutrients look familiar? They're some of the same ones I recommend you consume to nurture your master hormone. Just goes to show... fix your master hormone by eating the right foods and you'll help boost the overall health of your cellular function and DNA as well.

Avoid this Damaging “Effect” to Cut Your Risk of Heart Disease, Alzheimer's and Diabetes

In chapter 1, I briefly introduced what is called the “glycation effect.” This effect happens when glucose, the main sugar you use for energy, binds to some of your DNA, proteins and lipids, leaving them unable to do their jobs.²⁵¹

For glucose molecules to be able to enter your cells where they can be utilized as a fuel source, they require a well-functioning master hormone to make this happen. But when sugar cannot get readily into your cells, it stays in the blood stream in high amounts.

This sugar can then swiftly attach to the cells of sensitive organs such as your eyes, heart muscle, nerves, and even kidney tissues. This glycation effect impairs the functioning of cell metabolism so that over time excess sugar damages these vital organs.

From the *International Journal of Cell Biology*, we learn how dangerous a threat glycation can be to your DNA: “The formation of glycation adducts [reaction of two or more molecules forming a larger molecule] within cells can have severe functional consequences such as inhibition of protein activity and promotion of DNA mutations.”²⁵²

In addition, the glycation process forms non-functioning structures known as advanced glycation end products (AGEs). AGEs are a complex group of compounds formed when sugar reacts with amino acids. This formation can occur both in the food you eat and within your body as well.

I found growing evidence from research over the last 20 years that AGEs can trigger the development of chronic degenerative diseases associated with aging, including...

- Cardiovascular disease
- Alzheimer’s
- Diabetes

So, how can you limit the formation of AGEs in your body and help keep insulin in check?

Repair Your Master Hormone by Eliminating this Sweet Culprit

The formation of glycation end products (AGEs) in your body is a naturally occurring phenomenon. The problem starts as you age and structural proteins and DNA are damaged by AGEs.

Anything you can do to limit AGEs as much as possible helps protect your immune system from overworking to defend against them.

So, what is the main culprit here?

A single word is basically all you need to know – sugar! That’s right, consuming too many foods with excess amounts of sugar promotes the production of AGEs. And fructose (particularly, HFCS) is an extremely potent pro-inflammatory agent that creates AGEs and speeds up your aging process.



Limit your sugar intake (especially HFCS) to protect your master hormone and lower your risk of diabetes, heart disease, cancer and Alzheimer’s.

The amazing thing with all this is that you already know how important it is to limit your sugar intake and avoid risky sweeteners like HFCS. They...

- Increase your insulin and leptin levels and decrease receptor sensitivity for both of these critical hormones.
- Raise havoc with insulin and put you at greatest risk for diseases like diabetes, heart disease, cancer and Alzheimer’s.
- Set you up for greater risk of premature aging and age-related chronic degenerative diseases.

The bottom line with all this... repair your master hormone by limiting your daily sugar intake and avoiding artificial sweeteners like HFCS, and you’ll limit your body’s over-

production of AGEs and DNA damage from the glycation effect.

Focus in on eating fresh (preferably organic) raw fruits and veggies. These contain natural sugars to give you the energy you need without disturbing insulin.

Live a Long and Robust Life by Strengthening Your DNA Safeguards

It's not often that I follow the well-known approach of saving the best for last. But in this case, that's exactly what I've done in this chapter.

We need to start with a bit of DNA 101 to understand the significance of what I'm about to share with you.

Each of your cells contains several feet of genetic material that must be packed in very tightly to fit the allotted cellular space. When your cells divide, the DNA strands split apart with every piece creating a new strand for each of the two new cells.

This cell division process can be very treacherous and vulnerable to harmful mutations that can distort your DNA. Fortunately, your body has ways to protect the all-important DNA. One of the most important and intriguing structures that protects your DNA are called telomeres.

Located at the tips of your 46 chromosomes, telomeres safeguard DNA by keeping your chromosomes intact. In a nutshell, telomeres...

- Protect your genetic data...
- Make it possible for your cells to divide...
- Hold some hidden secrets to how you age and why you may get certain diseases like cancer.

But here's the rub on telomeres. These structures that safeguard your DNA shorten with each cell division. Over time, telomeres get too short to shield your DNA. The DNA strands don't split apart properly anymore to form exact cellular copies.

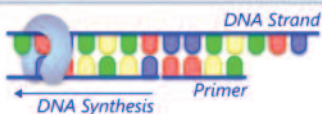
That's when your cells stop working, start functioning poorly, or worse yet, trigger disease.

What Are Telomeres?

1 When DNA replicates during cell division, a short piece of RNA called a "primer" helps it to get started.



2 Once a primer attaches, cellular machinery can copy the DNA strand.



3 Since the primer does not attach to the very end of the DNA strand, the copy is missing a section of DNA.



4 The next time the cell divides, the copied DNA loses more of the end section.

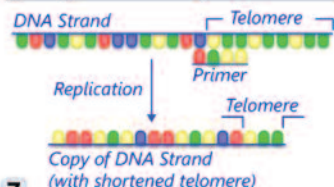


5 As cell division continues, the end section of each new DNA strand gets shorter and shorter. In humans, about 50 - 250 base pairs are lost per cell division.



How do our cells have any DNA left? Because of Telomeres

6 Telomeres are repeated sequences on the ends of DNA strands. They help protect the DNA strand from getting shorter during cell division.



7 In germline cells (egg and sperm), an enzyme called telomerase is responsible for adding more repeat sequences to the end of the DNA, thus making them "immortal".



8 In somatic cells, the telomerase enzyme functions at much lower levels, making these cells "mortal".



9 When the telomeres in a somatic cell shorten to a critical level, that cell no longer divides. This phenomenon contributes to some of the changes we see in aging.

Over time, your telomeres can get too short to protect your DNA. When you take the necessary steps to protect insulin, you can keep your telomeres from shortening and prevent premature aging and chronic disease.

Examples of diseases and chronic conditions linked to telomere shortening include...

- Insulin resistance and type 2 diabetes
- Dementia
- Cancer
- Obesity
- Osteoarthritis
- Decreased immune response
- Neurodegenerative diseases
- Testicular, splenic and intestinal atrophy
- Atherosclerotic lesions

The obvious question here that begs to be asked: “Is there anything you can do to slow down the shortening of your telomeres in some way?” From my view of recent technology advances out there, I truly believe the answer is a resounding “YES.”

I’m certainly not a lone wolf here when I say that by far the most important influential factor in curbing the reduction of the length of your telomeres is insulin.

By fixing your insulin, you allow it to unleash its super-powerful effect on your entire body. Now you can stop your telomeres from shortening. All you have to do is trust your master hormone by putting it back in control.

Actually, both insulin and leptin hormones are key factors in controlling telomere length. But you’re already aware of how your master hormone has major influence over leptin. If you’re insulin resistant and your master hormone has become dysfunctional, there’s a real good chance you are leptin resistant as well.

By now, you know how important eating a proper diet, engaging in the right type of exercise, reducing your stress and getting plenty of quality sleep are in keeping insulin sensitivity out of the danger zone. Well, this healthy approach can lead to both preserving your telomeres and in many cases, increasing your telomere length as well. But you don’t just have to take my word for it.

Research at the world-renowned Harvard (Dana Farber) Cancer Institute, Boston, Massachusetts, provides us with plenty of evidence in this telomere review published in *Current Opinion in Clinical Nutrition and Metabolic Care*. Here are some of the high points of what researcher Massood A. Shammam uncovered about telomeres...²⁵³

- Telomeres play a vital role in preserving the information in our genome.
- Shorter telomeres have been associated with increased incidence of diseases and poor survival.
- The rate of telomere shortening can be either increased or decreased by specific lifestyle factors such as: Smoking, obesity, lack of exercise, stress and eating an unhealthy diet.
- Accelerated shortening of telomeres has been associated with early onset of multiple age-associated health problems including heart disease, heart failure, diabetes, increased cancer risk and osteoporosis. Individuals whose leukocyte telomeres are shorter than the corresponding average telomere length have a three-fold higher risk of developing myocardial infarction (heart attack).
- Smoking is associated with telomere shortening. A white blood cell study of women found that telomeric DNA is lost at an average of “25.7-27.7” base pairs per year. With daily smoking, each pack of cigarettes causes an additional “5 base pairs” of telomere length to be lost (18 percent). This telomere loss equates to 7.4 years of life when a pack a day is smoked over 40 years.²⁵⁴
- Obesity can cause telomere shortening because of its association with oxidative stress and DNA damage. Obese women have been shown to have significantly shorter telomeres than lean women in the same age group. The excessive loss of telomeres in obese women was calculated to be equivalent to 8.8 years of life.
- When it comes to stress, there’s clear evidence that it can

affect the length of your telomeres. Researchers from the University of California, San Francisco, found that women with the highest levels of perceived stress have shorter telomeres on average by the equivalent of at least 10 years of additional aging when compared to low stress women (control group).²⁵⁵

- Telomere length is positively associated with dietary intake of fiber.
- Including healthy omega-3 fatty acids in your diet will yield reduced rates of telomere shortening. A lack of these powerful antioxidants was shown to increase the rate of telomere attrition in a five-year study.²⁵⁶

Here's even more proof of how proper diet, exercise and stress management can increase your telomere length. A study published only a few short years ago in the prestigious journal, *The Lancet Oncology*, bears this all out.

For this study, men in the healthy lifestyle group adhered to the following regimen...²⁵⁷

- Ate mostly a whole-food, vegetable-rich diet with few refined carbohydrates.
- Walked for 30 minutes a day, six days a week.
- Participated in 60 minutes of daily stress management (primarily yoga and mediation), and one 60-minute support group session a week.

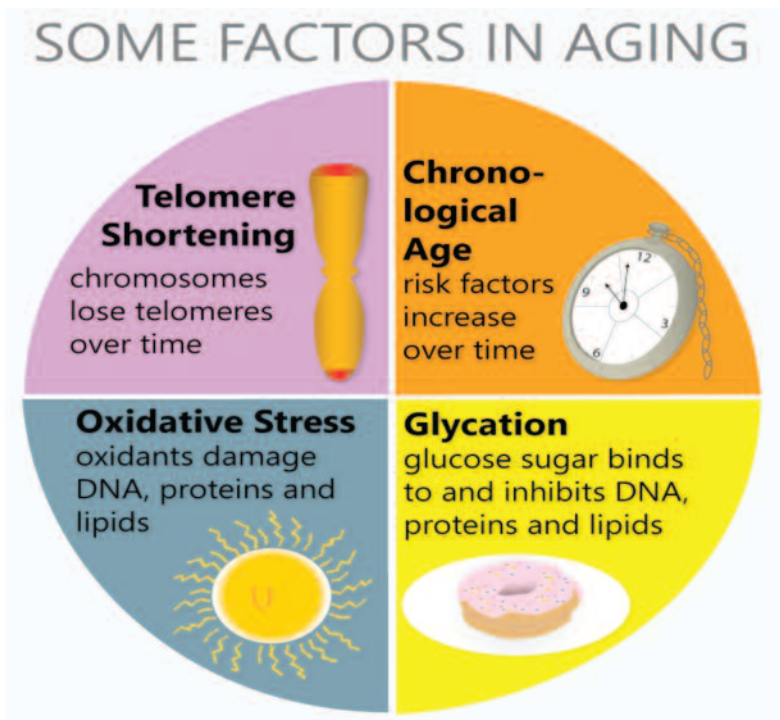
The end result of this five-year study was that men in the healthy lifestyle group showed an increase in telomere length compared to the control group.

But with all these studies, it's of the utmost importance to understand that if you take care of your master hormone, you'll preserve and even lengthen your telomeres.

One final measure of proof of all this can be found in research conducted by Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts. Of the 424 controls and 432 cases in this case-control study in the Boston area, mean

leukocyte telomere length shortening was associated with a dysfunctional master hormone (type 2 diabetes mellitus).²⁵⁸

This should be solid encouragement that if you follow my guidelines to a healthy master hormone, you'll take better control of your telomere length at the same time. In the end, this will protect you from premature aging and chronic disease so you can continue to enjoy a lengthy, active life.



If you repair and maintain a healthy master hormone, you'll stop your telomeres from shortening, limit the proliferation of glycation end products (AGEs), curtail DNA damage from oxidative stress, and live a longer, active and disease-free life.

15 Steps to Preserve Your Telomeres and Slash Your Risk of Disease

Despite what conventional medicine and Big Pharma want you to believe, there are natural ways to protect your telomeres and keep them from premature shortening.

Here are some of the many ways to help preserve your telomeres and DNA through healthy lifestyle practices:

1. Stop smoking.
2. Avoid drinking alcohol excessively.
3. Say “no” to processed foods, refined sugar, grains and carbs.
4. Eat plenty of fresh, raw fruit and vegetables.
5. Add lean proteins and healthy fats to your diet.
6. Drink plenty of clean, filtered water.
7. Engage in a regular exercise program (preferably a high-intensity program).
8. Find ways to reduce your stress (yoga, meditation, Tai Chi, etc.).
9. Make sure you’re getting enough vitamin D through natural sunlight and supplements.
10. Provide your body with plenty of omega-3s.
11. Raise the level of vitamin C available to your cells.
12. Get adequate supplies of vitamins B12 and B9 (folate).
13. Get plenty of rest and adequate sleep at night.
14. Add glutathione (GHS) to your diet through whey protein and raw eggs.
15. Rid your body of environmental toxins by cleansing and detoxification.

It’s no coincidence that these are similar steps to those you need to take to make sure your insulin is functioning at its best so you can avoid chronic disease and conditions. In this case, fix insulin and you’ll preserve your telomeres at the same time.

Sources:

Harvard (Dana Farber) Cancer Institute

Prefectural University School of Biosciences and Hiroshima University School of Medicine (Japan)

Twin Research and Epidemiology Unit, St. Thomas’ Hospital (London, UK)

Division of Cardiology, San Francisco General Hospital

University of California, Davis

University of California, San Francisco

Department of Medicine, University of California
CSIRO Food and Nutritional Sciences (Australia)

Take Action TODAY for a Disease-Free, Long and Active Life

In writing this book, my goal was to help you better understand the importance your master hormone plays in all chronic disease and conditions. This is something that conventional medicine has not fully recognized despite all the indications I've outlined here.

But certainly, just showing you all the compelling info on how your master hormone, insulin, plays such a critical role in your overall health wasn't the total goal. I also wanted to provide you with the many natural steps you could take to gain ultimate control of your master hormone. I strongly recommend you take action without delay and start implementing these guidelines. Simply remember this – fix your master hormone and you can be assured of enjoying a long and active life without the high risk of chronic disease.

To your health,

A handwritten signature in blue ink that reads "Michael Cutler M.D." in a cursive style.

Michael Cutler, M.D.

About the Author



Dr. Michael Cutler, M.D.

Dr. Cutler is a Board Certified Family Physician specializing in chronic degenerative diseases, fibromyalgia, and chronic fatigue. He is a graduate of Brigham Young University (BYU), Tulane Medical School and Natividad Medical Center Family Practice Residency, in Salinas, California.

Dr. Cutler has successfully brought professionals of several healthcare disciplines together to bridge the gap between conventional medical training and effective complementary medicine. Through his patients' experiences, as well as his own, Dr. Cutler has found many complementary practices to augment conventional medicine as an integrative solution. Because of his understanding of nutritional and natural medicine, he strongly promotes self-reliance in healthcare.

Dr. Cutler has more than 20 years of clinical family practice experience. His focus in clinical care is a highly educational approach, with a focus on the cause of illness.

Dr. Cutler is uniquely qualified as a noted authority on preventive solutions to aging issues, general family ailments and nutrition, with an understanding and respect for the natural harmony of the human body. He has devoted his career to learning how to optimize health through simple changes in diet and lifestyle. His goal is to educate others so they can heal and teach others such principles of sustainable health, thereby shifting the paradigm of health care to one of personal empowerment and inspiration from God.

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