

THE HEALTHY
**BLOOD
SUGAR**
BLUEPRINT



JAMES WALKER

GLUCOTRUST
GLUCOSE MANAGEMENT COMPLEX

Introduction

Congratulations on deciding to try GlucoTrust. You've taken an important step towards controlling your blood sugar so that you can protect yourself against Type 2 diabetes and its scary complications.

If you're currently prediabetic or diabetic, this can be the beginning of your path towards reversing your condition. Studies have shown that this is indeed possible. We believe the best way to do this is by using GlucoTrust along with making some simple, sensible lifestyle changes that you will learn about in this guide.

This combination (GlucoTrust + this guide) is designed to help you to lose weight more easily and enjoy more restful, rejuvenating sleep. (You'll soon learn more about the critically important role that *sleep* will play in your health journey.)

Why This Is The Perfect Companion Guide To GlucoTrust

The scientific explanation behind Type 2 diabetes is twofold:

- 1) Your pancreas isn't producing enough insulin, a hormone that regulates the movement of sugar into your cells.
- 2) At the same time, your cells respond poorly to insulin and absorb less sugar.

On its own, the GlucoTrust supplement can provide effective support. Yet we also wanted you to have this guide, to help you achieve optimal results.

By using this information along with GlucoTrust, we believe you'll not only get your blood sugar under control—you'll become a happier and healthier person in a number of ways.

Our main goal is to help you balance your blood sugar, and keep it a healthy level, in order to reverse Type 2 diabetes or prevent your blood sugar from ever reaching diabetic levels.

Yet another goal, which is no less important, is to help you to reach a healthy weight—since out-of-control blood sugar and obesity go hand in hand.



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The Vicious Cycle

Excess weight is the primary cause of Type 2 diabetes. People who don't struggle with this condition might say, *"Then just lose weight!"*

But this isn't so easy for most people. When you're diabetic, your whole system is out of wack and it makes losing weight more difficult than before.

Your metabolism isn't functioning properly...

Your body can't regulate and use the sugar in your bloodstream (glucose) and convert it into energy...

And without energy, you feel fatigued. It's hard to get motivated to go out and exercise...

It may begin to feel like you're stuck in trap (or what I call "The Vicious Cycle): you know you need to lose weight to get your blood sugar under control, but being diabetic can make losing weight extremely difficult.

You may find yourself gaining weight like never before, even though you aren't eating differently. This only makes you feel more lethargic and depressed, and less interested in physical activity.

For millions of people, the only “answer” is to get on medications and stay on them for life, to try to manage the diabetes disease instead of getting to the root of the problem and attacking it.

Well, this is what this ebook will show you how to do. Consider this your companion guide to GlucoTrust, a way for you to get the results you want faster and easier—and improve your overall health and quality of life in the process.

Because you don’t want to “get by” on prescription medications. You deserve a better quality of life than that.

Simply controlling your blood sugar with drugs isn’t going to give you back your energy and vitality, as long as you’re lugging around a lot of extra weight and you don’t like what you see in the mirror.

Getting your blood sugar in check is really just one piece of the puzzle. If you’re overweight, and suffering from all of the other aggravations and health problems that it causes, you want to slim down, too.

You want to look better and feel better...

You want to reclaim your energy and vitality, and enjoy a more active lifestyle...

And you want to stop having to worry about when your health might collapse. Not only for your own sake, but for the sake of the people you love. People who need you around.

Using the knowledge in this ebook, while taking GlucoTrust on a daily basis, should help you to achieve these goals faster and easier than other methods.

A Global Epidemic

Before we continue, some startling facts:

According to the American Diabetes Association, **34.2** million Americans, or 10.5% of the population, have diabetes.

Globally, **462 million** individuals are affected by Type 2 diabetes, which corresponds to 6.28% of the world's population.

These shocking numbers are showing no signs of slowing down.

Meanwhile, diabetes treatment has exploded into a gigantic industry that grows every year, as more people require medication (and many never get off it) .

About **\$327 billion** is spent in the USA alone by people trying to manage this condition.

That's why my team, in collaboration with experienced medical professionals, came up with this ebook.

We went through a ton of research. Our aim was to digest the scientific and medical terms into understandable and easy-to-read information that you can use immediately, to manage or reverse diabetes and have a better quality of life.

In the chapters that follow, you'll receive information about:

- Type 2 diabetes
- The cause for Type 2 diabetes
- Obesity and Type 2 diabetes connection
- Impact of sleep on diabetes
- How what you eat influences your blood sugar levels
- Exercise to keep your sugar levels under control
- The GlucoTrust supplement: How it works and the research behind it

One other note before we begin: as you may know, there are two main types of diabetes, Type 1 and Type 2.

Type 1 is a genetic disorder that usually shows up early in life. People with this condition cannot produce insulin and need to rely on injections or other methods to get insulin into their bodies.

Type 2 diabetes is largely diet and lifestyle-related and develops over time.

With this form of diabetes, your body is still able to produce insulin but it isn't enough, and your body doesn't respond to the way it should.

The good news is that Type 2 diabetes has been shown to be *reversible* when you make lifestyle changes—which can include taking quality supplements (like GlucoTrust), being more mindful of what you eat, and shedding pounds if you're overweight.

Yet all of the information in this ebook is designed to make this as easy and stress-free as possible.

No grueling diets. No need to join a gym or hire a trainer and work out like a maniac.

We're just going to suggest some simple, reasonable changes that are proven to work—and they ought to make your life more enjoyable, not more difficult.

Now it's time for us to begin this journey together.

Important Note: *None of the information in this book should be construed as medical advice. Please consult with your doctor before taking any of the advice in this ebook to address your high blood sugar or diabetes. And never stop taking a medication that has been prescribed to you unless you speak with your doctor about it first.*

Chapter 1

David's Diabetes Story

David was 59 years old when he was hospitalized. His frightening health battle began with vision problems.

A few weeks before his hospitalization he'd been experiencing blurred vision from time to time. He ignored these symptoms at first, thinking it was just something age-related.

Besides, he and his extended family were busy making preparations for the upcoming wedding of David's son.

The problem worsened. David was feeling dizzy as well...

But the excitement of the wedding, and spending time with his sons and grandkids who were in town, carried him through.

David told himself he'd go see a doctor once the wedding was over.

In the meantime, he had a blast with his family in the two weeks leading up to the wedding. Drinking too much alcohol, eating like a king at restaurants every night, and not getting enough sleep...

Until one day, David was at a store with his sons and two of his grandkids to get fitted for their tuxedos.

Suddenly his vision went blurry again...and this time he collapsed, unconscious.

Everyone panicked and rushed him to the hospital. It was especially terrifying for his young grandchildren.

After running some tests, David was diagnosed with diabetic retinopathy (vision problems due to uncontrolled diabetes) .

The doctor explained how his blood sugar fluctuations had damaged a nerve connected to his eye.

When it comes to diabetes-related vision problems, David is far from alone. About **12%** of individuals with diabetes may suffer from this.¹

This is just one of many possible complications you want to avoid. Before we discuss how to do this, let's get to know a bit more about diabetes.

Why Does Diabetes Occur?

Your body breaks down the food you eat into *glucose* to get the energy it needs to perform all of its functions.

But in order for your body to absorb and use this glucose, it needs the hormone *insulin*.

You can think of insulin as a “key” that unlocks your cells so that glucose can enter them. When your body has a problem

responding to insulin, glucose can't enter your cells and it accumulates in your blood.

In a diabetic person's body, two major problems with insulin exist:²

- 1) The cells in your pancreas that secrete insulin are mistakenly destroyed by your body's own immune cells
- 2) Body cells are not responsive to insulin the way they should be (also known as "insulin resistance")

The result of both conditions is high blood sugar levels.

Now let's clarify something about diabetes that is often misunderstood: the difference between Type 1 and Type 2.

Type 1 Diabetes (Insulin Deficiency)

This is also known as "insulin dependent diabetes." It's an autoimmune condition people are born with.

An autoimmune condition means your immune system, which normally protects your body from disease, attacks itself instead.

With Type 1 diabetics, their body's immune cells destroy the beta-pancreatic cells that produce insulin.

Type 1 diabetes means your body *can't* produce sufficient insulin required to manage blood glucose levels.

This is why people with Type 1 diabetes need to take insulin in order to live. This can be done with daily injections or a pump (a battery-powered device that is worn on the body to administer doses of insulin.)

If left untreated, Type 1 diabetes may result in:

- Increased thirst
- Increased appetite
- Need to pee frequently
- Unintentional weight loss
- Tiredness throughout the day
- Itching in genitals

What causes the initial problems in the immune system is not yet understood. But researchers believe it is a combination of genetic predisposition and environmental triggers.

Genetic Predisposition

This means having an increased likelihood of developing a particular disease due to family history and/or the presence of one of more gene mutations.

People with these certain genes are at a higher risk of developing Type 1 diabetes, but it's not a sure thing. For instance, in identical twins, one may have Type 1 diabetes, while the other won't.

Environmental Triggers

Factors that may trigger Type 1 diabetes in genetically predisposed individuals are:

- Vaccines
- Viral infection
- Vitamin D deficiency
- Increased insulin demand

Type 2 Diabetes (Insulin Resistance)

This is by far the most common type of diabetes and it's the type that is reversible. We'll be focusing on Type 2 diabetes in this guide.

Unlike Type 1 diabetics, people with Type 2 diabetes have beta cells that *can* produce insulin. But your cells don't respond to insulin the way they should.

This condition is known as *insulin resistance*.

The pancreas releases more insulin to compensate for the high blood sugar levels. But your pancreas can't keep up with your body's increasing need for it.

This creates a state where your body's insulin demands are not fulfilled and your blood sugar level keeps increasing, resulting in Type 2 diabetes.

Let's take a look at the factors that may increase your risk of insulin resistance:

Obesity

Most people with Type 2 diabetes are carrying enough extra weight to be classified as obese. Researchers thus believe that fat tissues play a vital role in the development of Type 2 diabetes.

Having a body mass index (BMI) of 30 or higher is a risk factor for Type 2 diabetes. In fact, it is responsible for **80% - 85%** cases.⁴

Research suggests that obese individuals are **80** times more prone to Type 2 diabetes than the general population.⁴

Studies have sought to figure out why. It's believed that fat cells release chemicals that cause inflammation. These chemicals alter the response of cells to insulin, resulting in insulin resistance, which is the hallmark of Type 2 diabetes.

Moreover, obesity changes your body's metabolism, causing fat tissues to release fat molecules into your blood. These molecules can also reduce cells' response to insulin, which means less insulin sensitivity.

Other Risk Factors

- A sedentary lifestyle
- Unhealthy eating habits with lack of fiber and excess fatty foods

- High blood pressure
- A history of gestational diabetes (high blood sugar levels detected for the first time during pregnancy, that gets normal a few months after child birth)
- Family history of Type 2 diabetes

Key Takeaways:

- **Your body cells need insulin to use glucose present in the blood.**
- **Type 1 diabetes is an autoimmune condition where your body's immune cells destroy pancreatic cells that produce insulin.**
- **Genetic predisposition and environmental triggers such as a viral infection are the major causes of Type 1 diabetes.**
- **Type 2 diabetes is a metabolic disorder where your body cells can't use insulin the way they should**
- **Obesity and other lifestyle factors such as a sedentary lifestyle are the leading causes of Type 2 diabetes.**

Did You Know?

In ancient times, people known as “water tasters” diagnosed diabetes by tasting the urine of people suspected of having the disease. (How'd you like to do *that* for a living?)

It was only in the **1800s** that scientists developed chemical tests to detect the presence of sugar in the urine.⁵

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Chapter 2

Getting To The Root Of The Problem

Humans are always striving to find solutions that make things easier for them. Just imagine life without technology. Things would really be inconvenient!

Letters that took weeks or even months to reach a loved one can now reach them in an instant, thanks to email.

The advancements with understanding and treating diseases has been no less remarkable. For people with diabetes, the 20th century was a life-changing period.

In 1921, researchers discovered that insulin was the problem behind diabetes. People with diabetes began taking this hormone to manage their blood sugar levels.¹

Before this research, doctors didn't have many options for those with diabetes. The best treatment available was to follow a strict diet with minimal carbohydrates. This diet could add a few years to a patient's life but it couldn't save them.

All of the research on insulin started when two researchers, Oskar Minkowski and Joseph von Mering, found out that the removal of the pancreas from dogs resulted in symptoms of diabetes, and they died soon after that.¹

This led the researchers to believe that the pancreas, and a chemical it produced, played a major role in diabetes.

Researchers named this chemical “insulin.” The name comes from the Latin word insula (island) .

Further studies showed that insulin resistance is the main cause of Type 2 diabetes.

Understanding Insulin Resistance

Insulin resistance is an impaired response of body cells to insulin, especially cells in the muscles, liver and adipose tissue.

It alters glucose disposal, causing the pancreas to compensate by increasing insulin production.

Dangers Of Insulin Resistance

Some consequences of insulin resistance include:

- Hypertension
- Visceral adiposity
- High blood glucose levels
- High uric acid levels
- Increased levels of inflammatory markers
- Blood vessel disorders

The most well known effect of insulin resistance is Type 2 diabetes. Researchers believe that insulin resistance begins 10 to 15 years before the onset of Type 2 diabetes.²

High insulin levels cause weight gain, which makes your body even more resistant to insulin.

Earlier, I described this as the “vicious cycle” that so many diabetic people struggle with.

This continues until the beta cells cannot sustain the insulin demand caused by insulin resistance, resulting in high blood glucose levels.

This high blood glucose levels eventually lead to a Type 2 diabetes diagnosis.

In addition to Type 2 diabetes, various other conditions are linked to insulin resistance, including:

- Cardiovascular disorders
- Obesity
- Nonalcoholic fatty liver disease
- Polycystic ovary syndrome

How Insulin Works

As mentioned above, there are three main areas in your body that resist insulin when you're diabetic: the liver, muscles and adipose tissue.

Researchers believe that insulin resistance begins in muscles because of excess fatty acids and inflammation.

As muscles account for about 70% of glucose metabolism, impaired muscle uptake causes excess glucose to return to the liver and increase free fatty acids. This further contributes to insulin resistance and fat deposits.²

Key Takeaways:

- **Researchers discovered that insulin was the problem for diabetes in 1921.**
- **Oskar Minkowski and Joseph von Mering found out that the removal of the pancreas from dogs resulted in symptoms of diabetes.**
- **Later, Insulin resistance was determined as the cause of Type 2 diabetes.**
- **Insulin resistance is an impaired response of body cells to insulin.**
- **The continuous gap between insulin demand and production causes glucose levels to consistently increase, resulting in Type 2 diabetes.**

Did You Know?

Cone snails use insulin as a “chemical weapon” to stun their prey. Two species, *Conus Geographus* and *Conus Tulipa*, use insulin

as one of the components in a "nirvana cabal"—a toxic blend they release into the water to help them disorient and snag fish.³

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Chapter 3

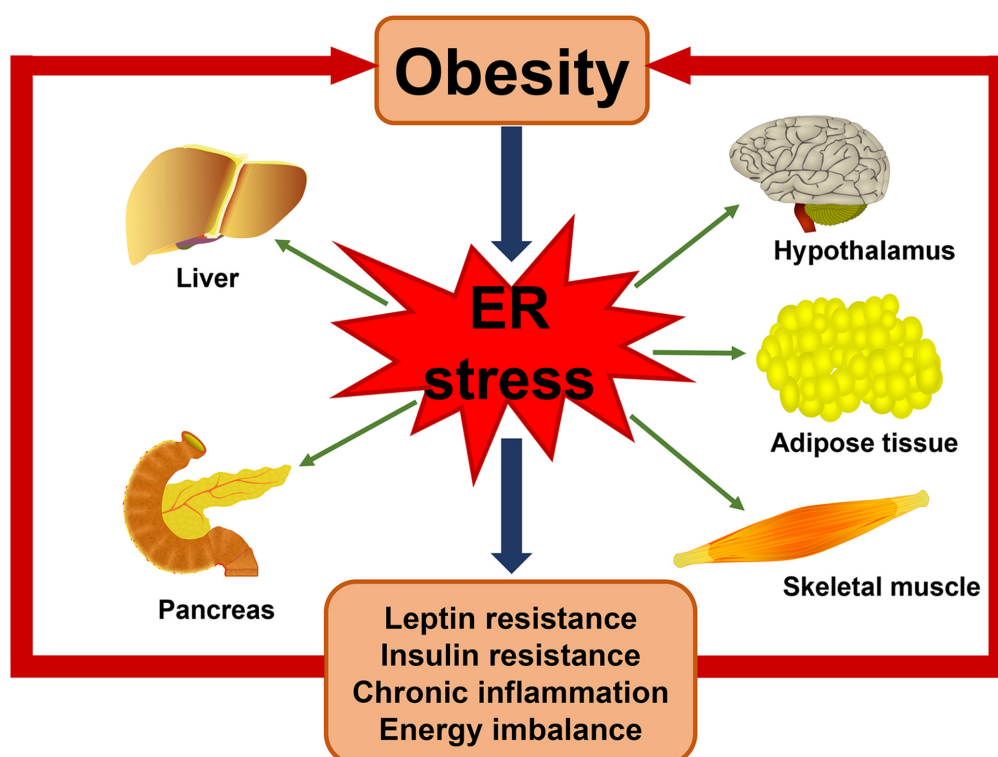
The Obesity-Diabetes Connection

Studies have found that around **85%** of Type 2 diabetes cases are due to excess weight or obesity.¹

But *why* does obesity cause diabetes?

Research suggests that obesity increases the amount of stress inside your cells.

So does overeating, which stresses the membranous network inside your cells known as the endoplasmic reticulum (ER).²



When your ER has more nutrients than it can handle, it signals the cells to decrease the effect of insulin receptors on its surface. This reduces the effect of insulin on your body cells.

When this continues for a long time, the condition leads to insulin resistance and persistently high blood sugar levels, one of the hallmarks of Type 2 diabetes.

In fact, while seeking to find out why obesity increases the risk of Type 2 diabetes, Harvard University researchers came across a pathway that leads to the development of the disease.²

They discovered that obesity stresses a system of cellular membranes which suppresses insulin receptors.

According to experts, this membrane is like a machine that is responsible for processing fats and proteins.

Once you enter a state of overnutrition—which is common in our “supersized” society where we eat way more food that is needed—all of these nutrients need to be processed, used and stored somehow.

But because your membrane is overworked, it and sends out warning signals.

These signals decrease the functioning of insulin receptors on the cell surface.

It's the ER's way of telling you that you are stuffing it with too many nutrients.

When this happens, your cells know that insulin is out there, but they don't want insulin receptors signaling for more insulin as they already have enough sugar.

However, the downside is that the insulin loses its ability to clear sugar from the blood.

And by suppressing your body's normal response to insulin, overnutrition causes inflammation in the cells, as well.

Experts believe this might also cause heart disorders, since inflammation is a common cause of cardiovascular disorders.

Key Takeaways:

- **Obesity is the cause of 85% of Type 2 diabetes cases.**
- **It increases the stress inside your cells that signals them to dampen down the insulin receptors on their surface.**
- **By suppressing normal responses to insulin, ER also activates inflammation in the cells.**

Did You Know?

In 1980, Quebec imposed legislation that banned advertisements for toys and fast food aimed at children under 13 in print and electronic media. The legislation was the first of its kind and helped reduce childhood obesity.³

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Chapter 4

Slimming Down The Sensible Way

Since obesity is the biggest risk factor for Type 2 diabetes, weight loss should be a major goal when trying to manage or prevent this condition.

However, weight loss should be gradual and consistent. This is why we don't encourage you to go on a strict diet, or plunge into a grueling exercise routine that you won't want to stick with.

Starting by aiming to lose 5-10% of body weight is a good and safe approach. Trying to rapidly lose more than that can be dangerous—and it means you're probably trying to stick to a diet you hate, and perhaps an exercise program you hate just as much.

You know as soon as you quit, the excess weight will return. Maybe *more* than you lost!

Yet getting rid of excess weight will improve the way your body responds to insulin, reduce glucose concentration, and also reduce the need for some diabetes medications.

The key is to approach this with a sensible strategy that *doesn't* disrupt your life or make you feel like you're “depriving” yourself.

If you're willing to combine taking GlucoTrust with some fairly simple lifestyle changes—such as a healthier eating strategy and

a moderate amount of *enjoyable* exercise—you're sure to see faster, better results.

Healthy Eating Guidelines

Weight loss occurs when energy expenditure exceeds calorie intake. Usually, an energy deficit of 500 - 1,000 calories results in about weight loss of two pounds per week.¹

So controlling the calorie intake is the main goal here. It's also recommended to follow dietary guidelines such as:²

- 20-35% calories coming from fats
- 45 - 65% of the calories from carbs
- 10-35% of the calories from protein

In addition, obese patients with diabetes or insulin resistance benefit from limiting their intake of complex carbs. These foods include rice, potatoes, peas, bread, pasta, cereals, and sweet potatoes.

This is because complex carbs increase blood sugar more than other food items.

Increasing fiber intake is also beneficial for both losing weight and managing diabetes. Fiber-rich foods require more time to chew, and you take a long time to eat them.

Our Top 10 High-Fiber Foods:

- Beans
- Broccoli
- Berries
- Avocados
- Popcorn
- Whole Grains
- Apples
- Dried Fruits
- Potatoes
- Nuts

These foods result in the consumption of fewer calories and promote a sense of “fullness” between meals.

Getting Physical

It’s no secret that being more active and engaging in regular physical activity is another key to losing weight.

But you should also know that it improves *glycemic control* and *insulin sensitivity*.

These two things help your body to balance its blood sugar and reverse Type 2 diabetes, or prevent you from being a victim of the disease in the future.

We all have our own preferences as far as the type of physical activities we enjoy. Usually, the ideal goal is 30 to 45 minutes of moderate-intensity exercise, at least five days a week.³

If you can't exercise this much during a single session, you can do it in multiple, shorter sessions.

For instance, you can do three sessions of 10 minutes. This will give you the same benefits.

You can also use a pedometer (or a FitBit watch) to track your step and help you achieve your exercise goals. See if you can work up to 8,000 steps per day.

Bariatric Surgery

The National Institute Of Health (NIH) suggests that bariatric surgery can be another option to lose weight if:⁴

- You have a BMI of or above 40
- You have a BMI of 35 - 39.9 along with obesity-related medical complications such as heart diseases, diabetes, sleep apnea, etc.

There are three main types of bariatric surgery: *restrictive*, *malabsorptive*, and *combined*.

Restrictive surgery, as the name suggests, restricts the amount of food you can ingest. This type of surgery reduces the size of the stomach so that you feel "full" a lot sooner.

Malabsorptive surgery alters the way your body digests and absorbs food by bypassing part of the small intestine.

Studies have shown that these surgeries can be very effective for managing diabetes—not only because of the amount of weight you lose, but also because of hormonal changes that occur when the food bypasses the stomach.

Key Takeaways:

- **Obesity is the greatest risk factor for Type 2 diabetes and weight loss should thus be the primary goal to manage or prevent it.**
- **Calorie deficit through diet is an excellent way to lose weight. Deficits of 500 - 1,000 calories result in weight loss of about two pounds per week.**
- **Other options include exercise, medicines, and bariatric surgery.**

Did You Know?

One in three children and teens in the U.S. are obese, and two out of three don't exercise.⁵

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Chapter 5

Overcoming Insulin Resistance

The beta cells of the pancreas regulate insulin release. This means they play a crucial role in maintaining healthy blood glucose levels.

In obese people, their beta cell function is weak, and insulin sensitivity is too low.

People with this “insulin resistance,” whether they’re slim or fat, have lower insulin clearance in the liver compared to the general population.

There is a constant back-and-forth relationship between beta cells and your body’s insulin requirements.

In a normally functioning body, when more glucose is needed, your beta cells ramp up insulin production. When glucose demand is low, the beta cells reduce production.

But when your beta cells aren’t doing their job, and your body is resistant to insulin, your fasting glucose levels get too high. When they cross a certain limit, you’re classified as having Type 2 diabetes.

One reason for abnormal beta cell function is having a genetic abnormality.

Another reason is continuously increasing non-esterified fatty acid (NEFA) levels. While these fatty acids play an important role in insulin release, you don't want your levels to get too high.

This can cause glucose-related problems with the way your body secretes insulin.

So that's the basic science behind it. No big surprises there...

But I have a feeling the next chapter *will* surprise you.

We're going to discuss a huge part of your lifestyle—something you spend many hours doing every day—yet you've probably never considered how it's affecting your blood sugar, your weight, and overall health and mood.

Scroll down and let's dive into it...

Did You Know?

90-95 percent of people with diabetes have Type 2. About 5 percent have Type 1. The rest have gestational diabetes, which only occurs in women during pregnancy and goes away after they give birth.

Chapter 6

The Link Between Sleep and Diabetes

It's said that **50%** of people with diabetes have sleep problems due to high blood sugar levels and associated complications.¹

Researchers have known about the connection between sleep and diabetes for a while. The good news is that there are simple ways for you to improve your sleep quality (without medications), thereby helping to manage diabetes.

High blood sugar levels or low blood sugar levels during the night can cause insomnia. It can also result in next-day fatigue.

One reason is that when your blood sugar levels are high, the kidneys try to flush out excess glucose through urine. This causes you to urinate more often. If this happens during the night, it will cause disruptions to your sleep.

High blood sugar levels may also cause headaches, tiredness, and increased thirst that may interfere with sleep.

(By the way, low blood sugar levels are no good, either—they may cause you to break out into a sweat, have nightmares, or feel confused or irritated when you wake up.)

It becomes another vicious cycle. When you're not getting enough sleep, it can make your blood sugar levels worse. This is because it affects your cortisol, insulin and oxidative stress.

Studies show that sleeping for more than eight hours a night, or less than six hours, increases the risk of high blood sugar levels.²

Other studies have shown that lack of sleep increases blood sugar levels even in non-diabetic people.

Poor Sleep & Weight Gain

People with irregular sleep habits are also more likely to have an erratic diet. Sleep deprivation increases the level of *ghrelin*, the hunger hormone, and reduces the level of *leptin*, the hormone that makes you feel full.

In other words, not getting a good night's sleep can actually make you fat—or make losing weight way more difficult.

In addition, to compensate for low energy, sleep-deprived people are likely to seek comfort food, which increases their blood sugar levels. This also results in weight gain and obesity, the major factor behind Type 2 diabetes.

People who sleep poorly are also less likely to take actions to manage their blood sugar, such as monitoring their glucose levels and getting enough exercise.

“Drugging” yourself to sleep with medications isn’t solving anything. It should also be noted, people who depend on sleeping pills are at a higher risk of cognitive decline.

Sleep Disorders Common In People With Diabetes

If you have Type 2 diabetes, you may be more prone to sleep problems, including obstructive sleep apnea and restless legs syndrome.³

Obstructive Sleep Apnea (OSA)

OSA is a sleep disorder which causes you to momentarily stop breathing throughout the night. In most cases, the person suffering from OSA is completely unaware, although their bed partner may observe them snoring and gasping for air.

These breathing lapses often cause brief awakenings that disrupt the natural sleep cycle and destroy sleep quality.

OSA is mainly seen in obese individuals, as their neck circumference interferes with breathing.

While OSA doesn't directly cause Type 2 diabetes, it indirectly increases the risks. It's also seen to cause insulin resistance in non-diabetic individuals.

According to the American Diabetes Association, one in four people with Type 2 diabetes have OSA.

Restless Legs Syndrome (RLS)

About one in five people with diabetes have restless leg syndrome, a condition which causes an uncontrollable urge to move your legs.

It can also cause tingling or other irritating sensations in the legs that interfere with sleep.

People with uncontrolled high blood sugar levels may have a condition known as peripheral neuropathy. Its symptoms also include tingling and numbness.

Obesity & OSA

Type 2 diabetes and OSA are both more common in obese people. But OSA may continue to influence insulin resistance even after a person loses weight and gets their blood sugar under control.

OSA not only ruins your sleep cycle; it may also alter the body's oxygen supply. These effects cause impaired glucose metabolism and insulin resistance.

Studies suggest that treating OSA improves blood sugar levels. Seeing your doctor about using a bedside CPAP machine, to regulate your breathing and oxygen flow throughout the night, is one way to sleep better while helping with your blood sugar *and* efforts to lose weight.

Coping With Sleep Issues

Here are some tips to help you enjoy better, more peaceful sleep and all of its benefits:

- Keep a regular sleeping schedule
- Stick to an eating plan that aids in keeping your blood sugar levels under control and prevents highs or lows at night
- Avoid stimulants such as nicotine and caffeine in the hours before bedtime
- Keep your bedroom dark, cool, and quiet
- Don't use a mobile device before going to sleep. The bright screens of our smartphones stimulate the part of our brains that keeps us awake.

If you're concerned that you might have sleep apnea (and if you're obese and you snore, you very well might have it), ask your doctor about it.

He may recommend doing a "sleep study" which will monitor your sleep quality, and how many times per night you wake up due to your breathing shutting down. (The results may shock you!)

If you do have OSA, I highly recommend using a CPAP machine. My sleep study showed that every night my body would stop breathing over a hundred times! Then my brain would panic and wake me up and I'd gasp for air.

I was mostly unaware this was going on. My sleep was being ruined without me even knowing it. (And I was extremely lucky my brain *did* restart my breathing, literally thousands of times over the years. Some people with OSA never wake up.)

I can tell you from personal experience that using a CPAP can make a world of difference. Although it took some getting used to, I grew to love it.

Now I don't want to sleep without it. My sleep quality is massively improved and I need less sleep to feel totally recharged in the morning.

Key Takeaways:

- **50% of the people with Type 2 diabetes have sleep problems**
- **Getting less restorative sleep is also linked to high blood sugar levels**
- **People with Type 2 diabetes are more prone to certain sleep disorders such as sleep apnea and restless leg syndrome.**
- **Improving sleep can thus help you manage or prevent Type 2 diabetes.**

Did You Know?

Lack of quality sleep can harm you in many different ways. It's said that the late superstar Michael Jackson went 60 consecutive nights without REM sleep (the deepest stage of sleep) and it may have been a big factor in his death.

Keep this in mind: according to the National Sleep Foundation, about 90% of Americans frequently use an electronic device in

the hour before they go to bed. Looking at a brightly-lit screen prior to trying to sleep can make for a restless night.

This is because your brain is wired to secrete *melatonin*, the sleep hormone, when it's dark and getting late. Looking at a bright screen disrupts this melatonin release.

Try turning off all electronic devices at least one hour before you go to bed. Read a book, take a bath, or do some other type of relaxing activity instead. If you must use a device, reduce its effects by turning the brightness way down.

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Chapter 7

Healthy Eating Strategies

“It’s you or your leg.”

The doctor’s words echoed in John’s head as he lay alone in his dark hospital room.

Just six months ago, John was unaware he had any health problems at all. He felt good. Then one day he noticed an ulcer on his lower leg.

The doctor diagnosed him with a diabetic foot ulcer. John was given strict instructions on taking care of the wound and managing his blood sugar levels.

John took them lightly. His wife made sure his wound was properly cared for, but his eating habits remained erratic.

He’d binge on unhealthy foods and enjoyed sugary snacks and beverages throughout the day.

He didn’t follow any sort of routine—he would eat at different times due to his busy work schedule. Sometimes he’d eat just one meal a day. The next day, he might eat enough for two days.

He thought, *“But I’m taking my medicine. I should be okay.”*

And that was his biggest mistake (you'll see why in a bit).

The ulcer grew slowly and the area of his leg began to darken in color.

Then, the pain began to gradually set in...

Until one day, he lost feeling in his leg.

By the time John and his wife reached the hospital, John lost consciousness and was admitted to the ER.

After examining the ulcer, the doctor told him it was too late to save his leg and that he needed amputation.

"It's you or your leg."

His uncontrolled blood sugar had damaged his nerves, and now to save him, the doctor had to resort to amputation.

John's story is far from unique. Foot ulcers are common in people with diabetes, affecting 60% of them. And around 11% of people with diabetic foot ulcers need amputation at some point.¹

The main reason for this is poor eating habits. What you eat has a *significant* impact on your weight and blood sugar levels.

Fortunately, a healthier eating strategy can help you lose weight, control your blood sugar, and feel better than you've felt in years.

It also reduces the risk of complications, including heart disease, nerve damage, and strokes.

Let's understand how different eating strategies can dramatically improve your health and blood sugar levels.

Foods That Lower Blood Sugar Levels

When you have Type 2 diabetes, it's recommended you follow a diet rich in nutrient-dense foods that provide vitamins, minerals, and fiber.

It's also important to add a variety of heart-healthy fats, including polyunsaturated and monounsaturated fatty acids. These foods can help manage cholesterol levels and support your heart and overall health.

Similarly, foods rich in fiber support blood sugar management by keeping you fuller for longer and helping to prevent you from eating when it isn't necessary.

Notice I avoid using the word "diet" because that word implies having to deprive yourself and eat bland foods you don't enjoy. I prefer to call it a healthier eating strategy, because it doesn't need to be difficult and unpleasant.

"Diets" are hard to stick with. But it shouldn't be hard for you to make some of the following adjustments to what you eat, and how you eat.

Here are some nutritious, tasty and stomach-filling foods you can incorporate into your new eating strategy:

- Fruits such as oranges, melons, peaches, apples, berries, and pears
- Vegetables including cauliflower, cucumbers, broccoli, spinach, and zucchini
- Legumes such as lentils, beans, and chickpeas
- Whole grains including couscous, brown rice, quinoa, and oats
- Protein-rich foods such as seafood, tofu, skinless poultry, lean cuts of red meat, and tempeh
- Seeds including pumpkin, hemp, chia, and flax seeds
- Nuts such as walnuts, macadamia nuts, almonds, and cashews
- Beverages such as black coffee, vegetable juice, water, and unsweetened tea

Foods To Watch Out For

While there is no need to avoid certain foods completely, here are some foods you should start limiting (or eliminating, depending on how serious you want to get) :

- Full-fat dairy items such as butter, sour cream, whole milk, and cheese
- High-fat meats including fatty cuts of beef, pork, poultry skin, lamb, and dark meat chicken

- Sugar-sweetened beverages including soda, sports drinks, juice, and sweet tea
- Processed foods such as microwave popcorn, convenience meals, chips, and processed meats
- Trans fats, including fried foods, partially hydrogenated oil, and dairy-free coffee creamers

The Keto Diet

There's that "diet" word again...but in this case we'll make an exception since this particular type of eating strategy has become hugely popular.

This is partly because you're allowed to eat a lot of delicious food yet it can be very effective for weight loss.

The keto diet is a low-carb diet that involves foods rich in proteins and fats such as poultry, eggs, nuts, meat, seafood, cheese, and nuts. It also includes non-starchy vegetables such as cauliflower, kale, broccoli, cabbage, and other leafy greens.

This diet limits foods rich in carbohydrates, including dried legumes, grains, fruits, root vegetables, and sweets. Usually, keto diets usually involve between 20 to 50 grams of carbs per day.

A 2017 review suggested that low-carb diets support healthy blood sugar levels in people with Type 2 diabetes and improve cholesterol levels.²

Another study suggested that the keto diet aids in managing blood sugar levels by improving insulin sensitivity.³

The Mediterranean Diet

The way of eating is based on plant-based foods such as vegetables, whole grains, seeds, fruits, dried legumes, and olive oil.

You'll need to limit meat intake and poultry, eggs, fish, and dairy products.

This diet is rich in minerals, healthy fats, vitamins, fiber, and vitamins. And it's low in saturated fats, cholesterol, added sugars, and trans fats.

A 2015 study suggested that people following the Mediterranean diet had better sugar level control than those on a conventional American diet.⁴

This diet is also associated with better blood pressure levels and reduced weight.

Moreover, following the Mediterranean diet has been shown to lower the risk of Type 2 diabetes by over 20 percent and heart problems by up to 30%.⁵

The DASH Diet

The Dietary Approach to Stop Hypertension (DASH) diet was designed to lower blood pressure, but it's also helpful with weight loss and reversing or preventing Type 2 diabetes.

Similar to the Mediterranean diet, the DASH diet emphasizes plant-based foods, including vegetables, whole grains, fruits, dried legumes, and seeds.

It also includes poultry, fish, and low-fat dairy products. It limits sweets, red meats, and foods rich in sodium, saturated fats, or added sugar.

Studies have shown that the DASH diet is a sustainable plan for people with Type 2 diabetes and aids in reducing cholesterol, blood sugar, body weight, and insulin resistance.⁶

It also protects against long-term diabetes-related complications.

Vegan/Vegetarian Diets

With vegetarian and vegan diets, you'll avoid poultry, meat, and seafood. Vegan diets don't allow dairy or eggs, either.

You'll focus on eating plant-based protein foods, including:

- Tempeh
- Lentils
- Seeds
- Grains
- Tofu

- Beans
- Split peas
- Nuts

A 2014 study showed that vegetarian diets are associated with lower blood sugar levels and better long-term blood sugar management.⁷

Studies also show that having fewer animal products and more plant-based products lowers the risk of prediabetes, insulin resistance, and diabetes.⁸

However, you need to have a balanced diet even when consuming plant-based food items. You should include foods with carbs, proteins, and fats to meet the nutrient requirements of your body.

Many people don't consume enough protein sources when they follow vegan or vegetarian diets.

A Word Of Caution

Whichever eating strategy or you may choose, it should include a variety of nutrient-rich foods. Also be aware of the size of the portions.

Make a conscious effort to limit your consumption of trans fats, saturated fats, added sugars, and high cholesterol foods.

Your dietitian or doctor can also help in offering meal planning that works the best for you.

Key Takeaways:

- **More than 60% of individuals with Type 2 diabetes have diabetic foot ulcers. 11% of them are at risk of amputation.**
- **Dietary negligence is the main cause of foot complications needing amputation.**
- **Healthy food options that lower blood glucose levels are those rich in dietary fiber, heart-healthy fats, and protein.**
- **In contrast, foods rich in trans fats, sugar, cholesterol, and simple carbs hamper your blood sugar control.**
- **Some healthy diet options include carb counting, keto diet, Mediterranean diet, and DASH diet.**

Did You Know?

Chocolate was first discovered in 1910. It's made from roasted cacao beans that have many health benefits. Some of the benefits of dark chocolate include lowering blood pressure, managing stress, and improving vision.

A study by Harvard also found that drinking two cups of hot chocolate a day can prevent memory decline!

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Chapter 8

A Simple Meal Planning Method

One easy way to maintain a balanced diet is using the “plate method.”

It’s a great way to enjoy healthy meals that support healthy blood sugar levels.

This method allows you to have perfectly portioned meals with a balance of carbs, protein, and fats, without calculating, counting, measuring, or weighing. All you need is...a plate!

To begin with, take a medium-sized plate, about 9 inches across. The size of the plate will determine your portion size, so be mindful of the plate you use.¹

Once you have the right plate, it’s time to fill it.



the plate into three sections.

Imagine drawing two lines (as in the image) that divide

Fill half the plate with **non-starchy vegetables**.

Non-starchy vegetables are low in carbs and don't significantly raise blood sugar levels. They are rich in minerals, vitamins, and fiber.

Examples of non-starchy veggies include:¹

- Broccoli
- Cabbage
- Asparagus
- Carrots
- Brussels Sprouts
- Cucumber
- Celery
- Eggplant
- Mushrooms

Next, one-quarter of the plate should be loaded up with **lean proteins**.

These are protein-rich foods such as chicken, lean beef, fish, cheese, and soy products.¹

Protein foods from animal sources are high in saturated fats and may increase the risk of heart disorders. Lean proteins are lower in saturated fats and are a healthier option.

Some foods that are rich in lean protein include:¹

- Fish like cod, salmon, and tuna
- Turkey, chicken, and eggs
- Shellfish like scallops, lobster, and shrimp
- Lean beef cuts such as chuck, flank, and sirloin
- Lean deli meats
- Cottage cheese

Then, fill the last quarter of the plate with **carbohydrate** foods.

Carbohydrate-rich foods include starchy vegetables, grains, legumes, beans, yogurt, fruit, and milk.¹

These food items have the greatest effect on raising your blood sugar levels. Therefore, limiting these foods can prevent your blood sugar levels from increasing much after a meal.

Examples of carbohydrate foods are:¹

- Starchy vegetables such as squash, green peas, potato, and sweet potato
- Whole grains such as brown rice, whole grain products, and popcorn
- Legumes and beans such as kidney, black, and pinto beans
- Fruits and dried foods
- Dairy products such as yogurt and milk

For your beverage, have water or a **low-calorie drink**.

Water is the best drink as it doesn't have carbs and calories and doesn't affect blood sugar levels.

Low and zero-calorie drink options include:¹

- Unsweetened coffee and tea
- Club soda and sparkling water
- Diet soda
- Flavored water without sugar

Some meals won't neatly fit into plate sections. Many dishes combine different food types like sandwiches, soups, and pasta.

The good news is that you can still use the plate method. Just figure out different foods in the dish and where they would fit on the plate.

For example, with pizza, the crust is carbs, cheese is protein, and tomato sauce is non-starchy vegetables.

You don't need to take apart the pizza and separate the different items on your plate. Just be mindful of where the different items would fit on your plate.

You can choose a thin crust to reduce the number of carbs, and top the pizza with more veggies instead of meat. Stick to one or two slices and serve with a side salad so that half of the meal has non-starchy vegetables.

Key Takeaways:

- **A simple yet effective way to plan your meals is the diabetes plate method. This method involves dividing what you eat into three parts.**
- **Half of the plate should include non-starchy vegetables such as broccoli, cabbage, and carrots**
- **One-quarter should be lean proteins such as turkey, fish, and cottage cheese.**
- **The last quarter of the plate should include healthy carbs such as whole grains, fruits, and starchy vegetables.**
- **Along with this, have a glass of zero-calorie drinks such as water and diet soda.**









Did You Know?

You can consume many of the foods we recommend in different ways. Look at the chart below for some examples...²

The exchange list a tool to help you plan healthy meals and snacks

Sample Exchange List		
Food Group	You Can Have	Or Exchange It For
Fruit (each serving contains about 15 grams carbohydrates)	1 small or medium piece of fresh fruit	1/2 cup fruit juice, or canned or chopped fruit
Vegetable (each serving contains about 5 grams carbohydrates)	1 cup raw vegetables	1/2 cup cooked vegetables or vegetable juice
Starch (each serving contains about 15 grams carbohydrates)	1 slice or ounce bread	1/2 cup pasta, cereal, starchy vegetable
Sugar, Honey, Molasses	1 teaspoon	2 grams carbohydrates
Milk (does not include cream, yogurt or cheese)	1 cup milk	12 grams carbohydrates and 8 grams protein
Meat	1 ounce meat, fish, poultry, cheese or yogurt	1/2 cup dried beans
Fat (includes nuts, seeds and small amounts of bacon and peanut butter)	1 teaspoon oil, butter or margarine	5 grams fat

Food List for Diabetes

Write your meal or daily targets for each food choice in the section below. Plan your meals by choosing foods you like from this Food List for Diabetes.

Starch & Bread	Fruit	Milk	More Carbs	Vegetables	Meat	Fat	Free Foods	
<ul style="list-style-type: none"> • Bagel, 4 oz, 1/4 • Beans, dry, cooked, 1/2 cup • Bread, 1 slice • Cereal, cooked, 1/2 cup • Cereal, unsweetened, 3/4 cup • Corn, 1/2 cup • Crackers, snack, 4-5 • English muffin, 1/2 • Hamburger or Hot Dog Bun, 1/2 • Pancakes, 4" across, 1/4" thick, 1 • Pasta, cooked, 1/2 cup • Peas, cooked, 1/2 cup • Pita, 6" across, 1/2 • Popcorn, plain, unbuttered, 3 cups • Potato, 1/2 medium • Potato, mashed, 1/2 cup • Rice, cooked, 1/3 cup • Squash, winter, cooked, 1 cup • Tortilla or taco shell, 6" across, 1 • Waffle, 1 small square 	<ul style="list-style-type: none"> • Apple, 1 small • Apricots, 4 whole • Banana, 1 small • Blackberries/Blueberries, 3/4 cup • Canned fruit in juice or water, 1/2 cup • Dried fruit, 1/4 cup • Fruit juice, 1/3 to 1/2 cup • Grapefruit, 1/2 large • Grapes, 17 small • Kiwi, 1 • Mango, 1/2 small • Melon, 1 cup cubes • Nectarine, 1 small • Orange, 1 small • Peach, medium, fresh, 1 • Pear, large, fresh, 1/2 • Pineapple, fresh, 3/4 cup • Raisins, 2 Tbsp • Raspberries, 1 cup • Plums, 2 small • Strawberries, 1-1/4 cup, whole • Tangerines, 2 small 	<ul style="list-style-type: none"> • Buttermilk, 1 cup • Evaporated skim, 1/2 cup • Goat's milk, 1 cup • Milk, 1 cup • Low fat or non-fat, 1 cup • Nonfat, dry, 1/3 cup • Soy milk, 1 cup • Yogurt, plain, sugar-free, fat-free, 2/3 cup • Yogurt, low fat, artificially sweetened, 3/4 cup 	<ul style="list-style-type: none"> • Cake, no icing, 2" square, 1 piece • Casserole or hot dish, 1/2 cup • Chili, 1/2 cup • Cookies, 2 small • Cupcake, frosted, 1/2 • Doughnut, glazed, 1/2 medium • Fruit juice bar, 1 • Gingersnaps, 3 • Ice cream, 1/2 cup • Maple syrup, honey, or table sugar, 1 Tbsp • Muffin, large 1.5 • Nonfat frozen yogurt, 1/3 cup • Pizza, 12" thin crust, 1/8 • Potato chips, 9 to 13 • Pudding, sugar-free, 1/2 cup • Soup, broth, milk, or bean based, 1 cup • Spaghetti or pasta sauce, canned, 1/2 cup • Tortilla chips, 9 to 13 • Vanilla wafers, 5 	<ul style="list-style-type: none"> One serving is 1/2 cup cooked or 1 cup raw * <ul style="list-style-type: none"> • Asparagus • Beets • Broccoli • Cabbage • Carrots • Cauliflower • Celery • Green Beans • Greens (collard, kale, mustard, spinach) • Mixed vegetables, (without corn, peas or pasta) • Mushrooms • Onions • Pea pods • Peppers • Salad greens (lettuce, spinach) • Tomatoes • Tomato juice • Turnips • Zucchini <p><small>* If you eat at one meal 3 cups or more of one vegetable use 1-1/2 cups of cooked vegetable or meat-free soup for carbohydrate amount as 1 Carbohydrate Choice</small></p>	<p>MEAT</p> <ul style="list-style-type: none"> • Beef, 1 oz. • Chicken, no skin, 1 oz. • Fish, 1 oz. • Ham, 1 oz. • Lamb, 1 oz. • Pork, 1 oz • Seafood, 1 oz. • Veal, 1 oz. <p>MEAT SUBSTITUTES</p> <ul style="list-style-type: none"> • Cottage cheese, 1/4 cup • Cheese, 1 oz. • Egg substitute, 1/4 cup • Egg whites, 2 • Peanut butter, 2 Tbsp • Peanut butter, 1/4 cup • Tempeh, 1 oz • Tofu, 1/2 cup • Tuna, 1 oz 	<ul style="list-style-type: none"> • Avocado, med., 2 Tbsp • Bacon, 1 slice (20 slb) • Butter, stick, 1 tsp • Cream cheese, regular, 1 Tbsp • Cream cheese, low fat, 1-1/2 Tbsp • Cream, half & half, 2 Tbsp. • Margarine, regular, 1 tsp. • Margarine, reduced-fat, 1/4 Tbsp. • Mayonnaise, regular, 1 tsp. • Oil, 1 Tbsp. • Peanuts, 10 nuts • Peanut butter, 1/2 Tbsp. • Salad dressing, regular, 1 Tbsp. • Salad dressing, reduced fat, 2 Tbsp. • Sour cream, regular, 2 Tbsp. • Sour cream, reduced-fat, 3 Tbsp 	<p>UNLIMITED USE</p> <ul style="list-style-type: none"> • Bouillon & broth • Club soda • Coffee or tea • Sugar-free soft drink • Gelatin dessert, sugar-free • Horseradish • Lemon juice • Mustard • Nonstick cooking spray • Popicles, sugar-free • Spices • Sugar substitutes • Tabasco sauce • Tonic water, sugar free • Vinegar <p>LIMIT 3, and spread intake throughout day!</p> <ul style="list-style-type: none"> • Candy hard, sugar-free, 1 candy • Cocoa powder, unsweetened, 1 Tbsp • Calumet, 1 Tbsp • Cream cheese, fat-free, 1 Tbsp • Deli pickle, med., 1-1/2 • Jam or jelly, low sugar or light, 1 to 2 tsp. • Mayonnaise, fat-free, 1 Tbsp • Salads, 1/4 cup • Sour cream, fat-free, 1 Tbsp • Soy sauce, 1 Tbsp • Syrup, sugar-free, 2 Tbsp • Taco sauce, 1 Tbsp • Yogurt, 2 Tbsp 	<ol style="list-style-type: none"> 1. Develop an individualized meal plan with your Registered Dietitian, Nurse, Physician or Health Educator. 2. Write your meal plan targets in the space below the food pictures. 3. For your upcoming meal or snack, circle the food item on the list that you will eat. To stay on your meal plan, eat only the total number of items allowed. 4. When your meal is completed, simply wipe off the laminated Nutrition Place Mat with a tissue! 5. Use the Nutrition Place Mat to help follow healthy nutrition guidelines and portion control. The food pictures will help you visualize well-balanced meals!
<small>1 serving contains approximately C=15, P=3, F=2-1, and averages 60 calories.</small>	<small>1 serving contains approximately C=15, P=0, F=0, and averages 60 calories.</small>	<small>1 serving contains approximately C=12, P=8, F=2 (for 1% milk) and averages 100 calories.</small>	<small>1 serving contains approximately C=15 with variable amounts P, F, and calories, depending on food choice.</small>	<small>1 serving contains approximately C=5, P=2, F=0, and averages 25 calories.</small>	<small>1 serving contains approximately C=2, P=7, F=3-3 for lean or medium fat meats, and averages 75 calories.</small>	<small>1 serving contains approximately C=0, P=0, F=5, and averages 40 calories.</small>	<small>Depending on food choice, there will be variable small amounts of C, P, & F in these food choices. Most contain negligible calories.</small>	

Food lists with a significant amount of carbohydrate are shown in yellow. These food groups are called "Carbohydrate Choices". Each food group listed contains approximately 15 grams of carbohydrate. See above for approximate accounting of carbohydrate, protein, and fat per serving in each food group. KEY: C = carbohydrate grams, P = protein grams, and F = fat grams.

Food lists with little to no carbohydrate are shown. Each food group has a different amount of carbohydrate, protein & fat. KEY: C = carbohydrate grams, P = protein grams, and F = fat grams.

Food Information Source: USDA Nutrient Database for Standard Ref., Release 19

To circle foods, use only wipe away crayons or non-toxic dry erase fluid markers. ©2007 Tabletop Nutrition, LLC www.tabletopnutrition.com

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Chapter 9

Get Up & Move

Did you know that only **40%** of people with diabetes exercise on a regular basis?¹

This is partly because most people have no idea *why* exercise can play a huge role in reversing or preventing diabetes.

So let's take a closer look.

When you do any sort of physical activity, your body needs additional energy in the form of glucose.

For instance, a sprint to catch the bus or train triggers your liver and muscles to release glucose for energy.

And thus, *exercise lowers blood sugar levels.*

According to studies, the optimal benefits come from exercising for a longer time—such as going for a hike.¹

This is because during a prolonged period of exercise, your muscles need to use more glucose than usual to supply them with energy.

It's recommended to start slow, and avoid intense exercise until you've been at it for a while (and you've discussed it with your doctor.)

Strenuous workouts cause small tears in your muscle fibers. When they heal, the muscles become stronger.

However, when you aren't used to super hard workouts you can cause too much damage to your muscle fibers. This is when you wind up with painful soreness that can last for days.

During this time, your muscles won't be able to use insulin, which will increase your blood sugar levels.

Besides, you may have complications that may make it challenging to carry out intense exercises. These are some of the diabetes-related complications that can make exercise difficult:²

Autonomic neuropathy may cause you to faint if you move around too fast.

Diabetes can also cause **eye problems** due to the formation of new blood vessels in your eyes, a condition known as *proliferative retinopathy*. The problem with these blood vessels is that they are leaky and weak.

When you lift heavy weights, jump, hold your head down, or make jarring moves, these vessels can bleed.

Your doctor can check your eyes with a dilated eye exam and then recommend whether certain exercises are safe for you.

So, it's always a good choice to consult with your doctor before starting to work out or shifting from one type of exercise to another.

Benefits Of Exercising

If you have Type 2 diabetes, regular, moderate-intensity exercise can help manage weight and blood sugar levels.

Exercising may also help lower the risk of strokes, heart attacks and kidney disorders, while boosting your overall health.²

Studies have shown that exercise also prevents the risk of diabetes in people who have prediabetes.

According to the American Diabetes Association (ADA), you should fit in at least 150 minutes of moderate-intensity exercise each week.³

If you can handle it, adding two sessions of strength training each week is a good idea.

Again, we recommend starting slow and easy, and gradually build up your conditioning.

Now let's talk about some of the most beneficial forms of exercise.

Walking

You don't need expensive exercise equipment or a gym membership to get moving.

Get a pair of supportive shoe, and you're good to go. You can achieve your minimum target for aerobic exercises by going for a 30 minute walk five days a week.

A 2014 study suggests that walking helps people with Type 2 diabetes to manage their weight and blood sugar levels.⁴

Cycling

About 50% of people with diabetes have arthritis, since they share common risk factors including obesity.⁵

Diabetic neuropathy is another common complication of Type 2 diabetes where high blood sugar levels damage your nerves. This can cause joint pain that makes certain exercises difficult.

If you have joint pain or arthritis, try low-impact exercises such as cycling to avoid straining your joints or causing you more pain.

Swimming

Water activities offer another joint-friendly exercise option. Water aerobics, swimming, and other aquatic activities can help your muscles and other organs work out with little stress on your joints.

A 2017 study suggests that aquatic exercises are as beneficial as land-based exercises for managing blood sugar levels.⁶

Aerobic Dance

Participating in aerobic dance can also help meet your exercise goals. Zumba is a great activity that combines aerobic movements and dancing for a faster-paced workout.

A 2015 study on women with Type 2 diabetes suggested that they were more motivated to exercise after a few months of Zumba classes. The participants also lost weight and improved their aerobic fitness.⁷

Working With Weights

Adding some weights to your routine, perhaps twice a week, is a great way to tone your muscles and burn calories. Your blood sugar levels should also improve as a result.

We're not talking about heavy-duty weightlifting, unless you're looking to build up muscle mass. You can buy some small, light weights that you work out with while you go for a walk or exercise in a swimming pool.

You can use free weights, weight machines, or even household objects. Just be sure you've learned how to handle weights correctly so that you avoid injury.

Hiring a professional trainer at your local gym is one way to learn. If you don't have the money to spend, YouTube is an absolutely incredible free resource. You can find tons of helpful videos that can walk you through virtually any type of workout.

Resistance Bands

Another way to strengthen your muscles is by performing strengthening activities using resistance bands.

In addition to boosting your strength, exercising with resistance bands can help with blood sugar control.

Calisthenics

With calisthenics, you use your body weight to strengthen your muscles. Common exercises include pullups, pushups, lunges, and squats.

You should work out all major muscle groups. It's also essential to give your body the time it needs between sessions, to recover from muscle-strengthening exercises.

Pilates

Pilates is a popular program designed to boost your core strength, balance, and coordination.

Studies on older women with Type 2 diabetes suggest that pilates can also help with blood sugar control.⁸

You can jump on YouTube to learn the movements, or sign up for Pilates classes in your area.

Yoga

According to a 2016 review, yoga can be an amazing tool for people with Type 2 diabetes looking to manage their weight, blood sugar, and cholesterol levels.⁹

Yoga can also help improve your sleep quality, blood pressure and even your mood and mental clarity.

Diabetes & Your Joints

High blood sugar, left uncontrolled over a long period of time, builds up in your joints. This is known as *glycation*.

While taking steps to manage your blood sugar can delay glycation, it might still happen at some point in time.

Glycation makes your joints brittle and stiff. This makes high-intensity exercise risky. One wrong move can injure your joints.

Stiff joints affect your balance, too, increasing your risk of falling.

It's also important to note, many people with Type 2 diabetes take cholesterol medicines called statins. They may result in joint and muscle pain, making it difficult for you to carry out high-impact activities.

These medicines also increase the risk of muscle or joint injuries.

The good news is that forms of exercise like swimming, Pilates and yoga can help you build balance, strength, and flexibility without putting too much strain on your joints and muscles.

Making Exercise Fun

There are endless ways to get more exercise without having to join a gym. The most important thing is that you get up and *move*.

More adventurous activities, such as scuba diving or rock climbing, can be a really fun option if you're in decent shape.

You may also find that by inviting a “workout buddy” to join you, you can help to motivate each other to stay on track.

Some people like the social aspect, too. Going for a 30 minute walk every day with a friend, or your spouse, gives you time to chat while you work on your health.

Monitoring Your Blood Sugar Levels

It's a good idea to check your blood sugar levels before exercising. If you intend to work out for more than an hour, we recommend checking your blood sugar in mid-workout. You might need a snack.

Workouts can lower your blood sugar levels, so it's smart to keep a carbohydrate snack handy—such as a fruit drink, or a piece of fruit. It will help restore your blood sugar to normal levels if it gets low.

Make It A Routine

It's also a good idea for you to eat, exercise, and take any medicine you're on at the same time every day. This can also help to prevent low blood sugar levels.

Take Care Of Your Feet

Invest in a good pair of athletic shoes that are the right type for the activity you're doing. For example, you shouldn't jog in tennis shoes, as they don't offer enough support.

Check your feet daily for cuts, redness, blisters, or sores, even when you don't work out.

Consult with your doctor if you notice any new foot problems.

Hydrate

Always drink before, during, and after your workout, even if you aren't thirsty.

Pain Vs. Gain

Some muscle soreness is to be expected, especially after a challenging workout if you're getting back into exercising after a long hiatus. However, if you experience any sudden or intense pain, that isn't normal. Stop that activity immediately.

Key Takeaways:

- **Only 40% of individuals with diabetes exercise, which may be a contributing factor for diabetes complications.**
- **However, before starting to exercise, it's essential to take your doctor's advice. This is because diabetes-associated conditions such as neuropathy and vision problems may affect your ability to exercise.**
- **According to the American Diabetes Association (ADA), at least 150 minutes of moderate-intensity exercise is necessary each week**
- **Healthy exercise options include walking, cycling, aerobic dance, weightlifting, and swimming.**

Did You Know?

Regular exercise, besides all of the good it does your body, has been shown to keep your mind sharp and prevent cognitive decline. Seniors who exercise have a lower risk of developing Alzheimer's disease.

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Chapter 10

Medications

You may have already tried some of these approaches. Maybe you cleaned up your eating habits. Or you joined a gym and committed to an exercise routine. But you're still struggling to manage your blood sugar levels and you're nowhere near your ideal weight.

In these cases, you may need *external* aid. The good news is, multiple options are available. In this chapter, we'll focus on conventional medical treatments for Type 2 diabetes.

How Do Medications Help?

As we discussed earlier, when you're diabetic your pancreas makes insulin but the cells no longer use it properly. The goal of using certain medications is to help your cells use insulin better and get rid of excess blood glucose.

Most medicine used to manage Type 2 diabetes are oral drugs. Only a few are available as injections.

Some of the common medications include alpha-glucosidase inhibitors, biguanides, and dipeptidyl peptidase-4 (DPP-4) inhibitors.

Now let's understand them in more detail.¹

Alpha-Glucosidase Inhibitors

Alpha-glucosidase inhibitors help your body break down table sugar and starchy foods. This helps to lower blood sugar levels. Take this medicine before meals for optimal results.

Biguanides

Biguanides help to reduce sugar your liver makes. They also decrease the amount of glucose your intestine absorbs, increase glucose absorption by the muscles, and make your body cells more sensitive to insulin.

The most common biguanide is metformin. Your doctor may prescribe it with other medications to manage Type 2 diabetes.

Dipeptidyl Peptidase-4 (DPP-4) Inhibitors

DPP-4 inhibitors assist by lowering blood sugar levels without causing hypoglycemia. They also help your body continue to make insulin.

Glucagon-Like Peptide-1 Receptor Agonists (GLP-1 Receptor Agonists)

The effect of GLP-1 receptor agonists is similar to what your hormone *incretin* does.

They boost B-cell growth and insulin use by your body. These medicines also help by decreasing your appetite and making you feel full for longer periods of time.

The American Diabetes Association recommends GLP-1 receptor agonists for people with Type 2 diabetes who also have cardiovascular diseases and/or kidney disorders.

Meglitinides

These medicines allow your body to release insulin. However, they must be used with caution because they can lower your blood sugar levels *too* much.

Sulfonylureas

Sulfonylureas are the oldest medicines used to manage Type 2 diabetes and are still used today. They stimulate your beta cells to produce insulin.

Thiazolidinediones

Thiazolidinediones help your fat cells to use insulin better and decrease the amount of glucose in the liver.

However, these medicines increase the risk of heart disorders. Usually, your doctor will continuously monitor your heart function while you're on this medication.

In some cases where medications can't manage blood sugar levels, insulin injections may be required to keep things under control.

Side Effects

Some common side effects of these medications may include:²

- Upset stomach
- Weight gain
- Low blood sugar
- Skin rash or itching
- Bloating
- Diarrhea
- Gas
- Swelling of legs or ankles
- Low blood sugar levels
- Weight gain

These are usually mild complications and resolve on their own in a few days after starting to take the medication.

However, in some cases, medicines may cause severe complications that require emergency care, including:²

- Drowsiness
- Confusion
- Seizures
- Fruity-smelling breath
- Breathlessness

- Slurred speech
- Severe headache
- Heart palpitations

Key Takeaways:

- **If lifestyle changes such as diet and exercise can't help manage your blood sugar levels, medications can help. (For many people, a healthier lifestyle + the right prescribed medications is the best way forward)**
- **Medications help by improving insulin resistance, lowering blood sugar levels, and supporting weight loss.**
- **Antidiabetic medications may not be suitable for everyone, especially those with heart problems. Your doctor should carefully monitor your condition if you have a long-standing condition and need antidiabetic medications.**
- **Common medicines include Biguanides, Sulfonylureas, and Thiazolidinediones.**
- **Some side effects of these medicines include extremely low blood sugar level, dizziness, shakiness, nausea, and headache.**
- **Severe side effects that require immediate emergency care include slurred speech, severe headache, seizures, confusion, and palpitations.**

Did You Know?

There are over 30 unique medications from 9 different drug classes currently approved for the treatment of hyperglycemia in Type 2 diabetic patients. Dozens more medications and several new drug classes are in development.”³

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Chapter 11

How GlucoTrust Works

Managing (or reversing) Type 2 diabetes involves keeping your blood sugar level under control. Doctors commonly prescribe medications such as metformin to help with this.

But there are natural supplements that can also be very helpful.

GlucoTrust is one such supplement. It contains a blend of more than a dozen herbs, nutrients and minerals that regulate your natural hormonal balance and allow your body's "biochemical process" to run smoothly.

Let's understand more about the ingredients in each capsule of GlucoTrust, and what they do.

Gymnema Sylvestre

The primary ingredient is Gymnema Sylvestre, aka gurmar, also called "the sugar destroyer."

This incredible herb comes from a shrub native to Africa, India, and Australia. The leaves of this plant have been used for thousands of years to treat an amazing range of ailments—from diabetes to malaria and even snakebites.

GlucoTrust contains this ingredient because according to research, Gymnema Sylvestre has blood sugar-lowering

properties and can promote healthier levels in people with Type 2 diabetes.¹

One of the ways it does this is by blocking sugar receptors in your intestine, preventing sugar absorption.

Yet it also assists you with losing weight. Another benefit of this herb is that it reduces sugar cravings. You'll have a less of a desire for sweet foods.²

This is because the primary ingredient is gymnemic acid, which temporarily blocks the sugar receptors on your taste buds.

Researchers carried out a study where some of the participants were given this ingredient. They showed less appetite for sweet foods than those who didn't take it.³

Then there was a three-week study in which rats were fed a high-fat diet. Rats who were given a liquified extract of the herb gained less weight compared to other rats.

Among humans, a study on moderately-obese people taking Gymnema extract reported a 5% - 6% decrease in body weight.⁴

One reason why is that gymnemic acid prevents absorption of glucose from the intestine.²

In addition, Gymnema boosts cell regeneration and insulin secretion. High insulin levels mean faster clearance of glucose from your blood.

As you've learned, if you have diabetes or prediabetes, your body can't make enough insulin and your cells become less sensitive to insulin over time.

Gymnema promotes the regeneration of insulin-producing islet cells and stimulates insulin production, all of which can balance your blood sugar levels.³

Gymnema Sylvestre may also help lower your LDL (or "bad cholesterol" levels.)

A study on moderately obese individuals suggested that Gymnema extract lowers LDL levels by 19% and improves HDL (good cholesterol) levels by 22%.⁴ This means a lower risk of heart disease.

It even helps with inflammation. Sometimes inflammation is a good thing, when your body produces it to fight off an infection. But in other cases, "bad" inflammation is triggered by the foods you eat and can cause health problems.

Studies suggest a link between high sugar consumption and inflammation. By reducing sugar absorption in your intestines, Gymnema Sylvestre can prevent inflammation caused by excess sugar intake.⁴

Biotin

The next ingredient is **Biotin**, which gets its name from the Greek word “biotin” which means “life.”

A daily dose of Biotin helps your body to convert food into energy, manage blood sugar levels, and metabolize carbs, fats, and proteins.

It also promotes healthy hair and skin while supporting your liver, eyesight, and nervous system.

Biotin (or B-7) is a member of the water-soluble family of B complex vitamins. According to the 2004 study published in the American Journal of Clinical Nutrition, Biotin can have a healthy influence on blood sugar levels.⁵

In this study, people with diabetes were given biotin every day for 28 days. It showed increased activity of the enzymes that regulate blood sugar levels.

Moreover, a 2011 study suggests that biotin *deficiency* impairs cholesterol and glucose regulation.⁶

On the cellular level, biotin deficiency causes decreased energy, higher stress levels, and a negative effect on glucose production.

Lastly, combining 2 milligrams per day of biotin with 600 micrograms per day of chromium was seen to improve glucose levels in study participants.⁷

And this leads us to our next ingredient...

Chromium

The effects of biotin become magnified when it's combined with chromium.

According to a study by Harvard Medical School, chromium can safely lower blood sugar levels and improve insulin sensitivity.⁸

When your body lacks chromium, your ability to lose weight is held back at a cellular level.

But having the right amount of chromium helps to activate your metabolism. Studies also suggest that chromium can help manage blood sugar levels by improving how your cells use insulin.

Many other studies have shown its effects on impaired glucose tolerance and diabetes.

Manganese

Manganese is another vital nutrient that stimulates insulin production, which turns your blood sugar into energy it can burn. Manganese also improves bone strength and promotes healthy brain and nervous system function.

This mineral is required by your body in small amounts for its healthy functioning. It helps to regulate the functioning of your nervous system, brain, and certain enzymes.

But for our purposes, its most important function is its ability to regulate blood sugar levels.

Studies have shown that people with diabetes have lower manganese levels.⁸ And in various animal studies, manganese deficiency was shown to cause glucose intolerance, similar to what happens when you've got Type 2 diabetes.

In other words, this nutrient can play an important role in living a diabetes-free lifestyle.

Licorice Root

Licorice root is one of the oldest herbal remedies used in traditional Greek and Chinese medicines.

It improves liver health and protects against fatty liver disease. At least 50% of people with diabetes have this condition, too.⁹

This root is rich in flavonoids, a compound that controls your appetite and helps to prevent obesity.

Studies have also shown that amorfrutins, natural substances present in the root, can help manage blood sugar levels and unhealthy inflammation.¹⁰

Cinnamon

Known as "the king of spices" for thousands of years, cinnamon has been shown to enhance beta cell function and lower insulin resistance. This makes it one of our best natural weapons against diabetes.

Cinnamon also:

- Promotes healthy blood pressure
- Assists with digestion
- Has powerful anti-viral, anti-bacterial, and anti-inflammatory properties.

This spice is rich in antioxidants as well, which can help to prevent a number of diseases. And according to a study, consuming cinnamon extract for about 12 weeks helped reduce oxidative stress (a harmful imbalance in your body) in 14% of the participants with prediabetes.¹¹

Cinnamon can also improve insulin sensitivity, helping to lower high blood sugar levels.

Another study on the benefits of cinnamon showed that consuming the spice increased insulin sensitivity, which helps to lower high blood sugar levels.¹²

A review of 543 people with Type 2 diabetes showed that consuming cinnamon reduced blood sugar levels by 24 mg/dL.¹³

In addition, Cinnamon keeps your blood sugar in check after you eat. (Normally, this is when your levels would spike.) It does this by slowing down the rate at which the stomach “empties” food, which is part of the digestion process.

One study conducted on participants taking 1.2 teaspoons of cinnamon showed that it led to slower stomach emptying. It also lowered blood sugar elevation after a meal, compared to those who didn't take it.¹⁴

This could be because it blocks enzymes that break down carbs in the small intestine.¹⁵

This health-enhancing spice also helps to maintain normal blood pressure and been shown to reduce “bad” LDL cholesterol by 9.4 mg/dL, which is a risk factor for heart disease.¹⁶

Juniper Berries

Juniper berries were buried in the tombs of ancient pharaohs and used to help the performance of athletes in the Roman Olympics.

Their potent healing powers come from antioxidants that cleanse the body of toxins and strengthen the immune system.

Juniper is also a natural stress reliever used by natural medicine practitioners to relax and calm the mind and body.

A study in rats showed that juniper berry extract lowers blood sugar levels and increases healthy HDL levels. Researchers

believe this is because the berry contains high levels of antioxidants.

Extra Benefits

This All-Star team of ingredients would be enough to make GlucoTrust one of the best supplements of its kind...

But there's even more in each capsule. GlucoTrust contains several all-natural, sleep-enhancing ingredients.

We talked earlier about the necessity of getting good, quality sleep. This is when your body goes into repair mode, which is especially important when your body is under stress from erratic blood sugar and carrying extra weight.

During deep sleep, your body is able to balance hormones such as cortisol, your "belly fat-storing" hormone.

A lack of deep sleep elevates cortisol. This means the food you eat gets turned into visceral fat, the fat inside of you that wraps around your abdominal organs.

But when you get enough deep sleep, your body can keep your cortisol in check while boosting leptin, your hunger-controlling hormone.

According to The National Library of Medicine, when leptin levels are low, as yours might be right now, your brain thinks you're starving.

You wake up hungry and feel hungry throughout the day because your brain thinks you need to eat more.

On the other hand, when your leptin levels are high, this sends a signal to your brain that you've got enough fat stored and no more is needed. This suppresses your appetite, making losing weight that much easier.

Now you understand why GlucoTrust also contains these sleep-enhancing ingredients. In fact, one of the first signs that GlucoTrust is working is that the quality of your sleep will improve.

This means falling asleep more easily, sleeping more soundly, and waking up feeling fully rested.

On top of all of this, GlucoTrust also contains a proprietary blend of 15 herbs that regulate your natural hormonal balance and allow your body's functions to run more smoothly.

Key Takeaways

- **Dietary supplements like GlucoTrust can help you to better manage your condition, especially when used along with healthy lifestyle changes.**
- **GlucoTrust contains a powerful combination of herbs, nutrients and minerals—some of which have been used since ancient times to treat a wide variety of health issues. Among its other benefits, this supplement is designed to promote healthy blood sugar levels, easier**

weight loss, and restful deep sleep to keep all of your important body functions running smoothly.

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Conclusion

We've reached the end of this guide. If you ordered your supply of GlucoTrust you can expect it to arrive shortly. In the meantime, we suggest that you start implementing the advice in this guide.

And remember, whatever your health situation may be right now, you've already taken a huge step towards success. You decided to take action. For this, you should feel proud of yourself.

Look at today as the first day of the rest of your life. You're going to enjoy the rest of your life to the fullest, and one of the keys to doing this is for you to get healthier, fitter and more active.

I hope this will also be the day that you let go of your past challenges and frustrations. Maybe you've been eating poorly and avoiding exercise for years, or even decades.

Maybe you've tried in the past to lose weight and get healthier, but whatever you tried didn't work. This is okay. We've all been there.

The past is finished and cannot be changed. The GlucoTrust

program (the supplement + this guide) is about helping you to move forward, and reclaim the healthy life you deserve.

So let's agree to let go of the past. No more guilt. No shame. There is only a bright future to look forward to and you're now on the path towards it.

The journey you're about to embark on will lengthen your life. It will also massively improve the quality of your life in very meaningful ways.

I wish you all of the best and hope to hear your success story soon.