

Diabetic's Guide to Healthy Blood Sugar Levels

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by
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Author's note...

One of the greatest challenges for diabetics is the misunderstanding of the word "Sugar" from family members, friends and co-workers. A majority of people still believe that eating sugar (candy, soda, desserts) is the contributing factor when someone finds out that they are a diabetic however that is far from the truth.

White sugar, raw sugar, brown sugar, powdered sugar and honey are ALL converted to **Glucose** (sugar) in our bodies. **Glucose is a Carbohydrate** and so are: breads, grains, pastas, starchy vegetable, milk products, processed foods, sodas and fruits. These sugars fall into two categories: Simple or Complex Carbohydrates

Since we know that Carbohydrates/Glucoses raise your blood "sugar" levels in both simple and complex ways then all we need to do is balance our intake of carbohydrates throughout the day while also balancing our day with proteins and fats.

I hope that this informational guide will help you understand your Blood Sugar Levels and just how important it is to keep them controlled.

Lorrie

Limits of Liability / Disclaimer of Warranty:

I am not a doctor, a nurse, or even the receptionist at a medical office. I am however the daughter and grand-daughter of both Type 1 & 2 Diabetics and I have had Type 2 Diabetes since 1996.

In no way are you to take this book and follow it without first talking with your Personal Health Care Providers. If you do not have a personal health care team and you think that you may be showing signs of diabetes then I urge you to call your local hospital and talk with their endocrinologist or diabetes center.

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Introduction

Lowering your blood sugar is an essential for those that have diabetes. For those that have not been told that they have diabetes, but that their sugar is high, this could be a precursor to what lies ahead. Lowering blood sugar is a process that entails several key aspects of your life.

Through diet, exercise, and proper doctor monitoring, most patients can lower their blood sugar levels considerably and even reduce their risk of various conditions including diabetes. For some, who have obtained diabetes because they are overweight which has triggered high blood sugar, reducing those blood sugar numbers is all it takes to pull out of the diabetic illness.

Learning as much as you can about your own health situation is an important first step. Knowing your “numbers” is the first step to fighting the problem. For most, a simple trip to the doctor is all this takes. Once you have that information, what you do with it will define the quality of life that you live.

While no one wants to be restricted, lowering your blood sugar levels means life or death to many.

Chapter 1: Lowering Blood Sugar Can Save Your Life

What is blood sugar and why is it so important to you? Throughout this book we will address many key areas that you need to focus on. The first is learning what high blood sugar is, why it is important and how to monitor your condition. Throughout the next sections, the book will reveal various ways that you can lower your own risks by lowering your blood sugar levels.

What Is Blood Sugar?

Your blood sugar is the concentration of sugar in your blood. It tells doctors how well your body processes sugars, called glucose. In a normal body, sugars are processed and used as energy for the cells in the body.

By measuring your blood sugar levels, doctors can determine if you are suffering from diabetes mellitus which is a disease characterized by the body's failure to regulate blood glucose.

Sugars including glucose and fructose are all in the blood normally. But, only glucose levels are regulated.

What's Normal?

Your doctor will likely tell you that your blood sugar is high (or even low in some cases.) But, what is a normal reading? Normal glucose levels in the body stay in a small margin throughout the day, depending on what you are doing. A normal range for blood sugar levels are between 80 – 100 mg/dl.

It is important to realize that blood sugar levels change throughout the day. For example, they tend to rise after eating a meal. When you get up in the morning, they are at their lowest until you eat your first meal. (See Appendix A)

For this reason, if you are instructed to monitor your own blood sugar numbers, you will need to do so at the same time every day, following your doctor's direction. Otherwise, you will not be able to chart any real fluctuations in your daily numbers.

How Is It Tested?

For most individuals, the first time that they hear that something is wrong with their blood sugar is at their doctor's office during a routine exam (or one for related to not feeling well). Doctors will determine that your blood sugar is high from one of several tests. They tell doctors how well your body reacts to glucose.

Some tests are used to determine if you have diabetes or a pre-diabetic condition. Others are used to gauge how well the diabetic conditions are being monitored by you through the care plan that has been established by you and your doctor.

These tests include:

Fasting Blood Sugar Test

During this test, the level of sugars in your blood after an eight our fast are recorded. Normal levels should be lower than 100 mg/dL. Those that have a range of 100 to 125 mg/dL are considered to have pre-diabetes.

Those with a range of 126 or higher may have either type 1 or type 2 diabetes. Generally additional symptoms are present including thirst, hunger, frequent urination and blurred vision. Some patients see a weight loss as well.

For those with recordings that range above 200 mg/dL, standard second testing which is done with the previous two levels is avoided and diabetes is diagnosed immediately.

Random Blood Sugar Tests

Your doctor may perform a random blood test on you to monitor your blood sugar levels. Here, there are no notes taken for meals, time of the day or beverages that you may have consumed.

A normal range is under 100 mg/dL. Those that have a level of 100 to 199 mg/dL will be considered pre-diabetic. A range over 200 mg/dL suggests type 1 or type 2 diabetes. Secondary testing may be done to confirm these numbers.

Oral Glucose Hemoglobin Test

Anyone that is pregnant is likely to have taken this test as a standard determinate for pregnancy related diabetic conditions. Here, your doctor will determine what your fasting blood sugar level is, as mentioned above. Then, you will be given a very sugary solution to consume.

Doctors will determine how much your blood sugars rise at the one hour point after taking this drink and again at the 2 hour level.

A normal range here is a test with a 140 mg/dL level or lower. Those that have a range from 140 to 199 mg/dL may have pre-diabetes. Those with a level above 200 mg/dL will be considered either type 1 or type 2 diabetes.

In this test, it is very important for you to be in good health as even a small cold can affect the results that you have. Eat normally and get enough sleep. Tell your doctor about any medications that you may be taken.

Do Your Own Testing

Getting a reading from one of these tests from your doctor is a first step, an indication that you need to make changes. Your doctor is likely to provide you with a plan to improve your health, which may include dieting, weight loss and medications. As we will reveal later, it is essential to make significant changes to your lifestyle.

Before you can make these changes, though, you must know how to monitor your own blood sugar. Those that have been diagnosed with pre-diabetes or diabetes are likely to be given instructions on taking their own blood glucose tests. If your doctor provides this, you should follow their directions.

Learning how to check your blood sugar is an important part of living with diabetes. Checking your sugar allows you to make changes to your diet and insulin if necessary, to help your body to use sugars the right way. A doctor or nurse should show you how to check your blood sugar until you feel comfortable about doing so. This is done using a glucose meter (which calculates your blood glucose,) a lancet and lancing device (used to prick the skin to allow blood to be drawn) and a test strip (which is used to collect blood and then is inserted into the glucose meter.)

Why Is Blood Sugar Important?

Diabetes is a very complex health concern. Research has proven direct links for patients that are suffering from this condition and heart disease, complications of other illnesses as well as early death.

When the blood sugar drops too low in your body, it can be potentially fatal. This is called ***hypoglycemia***. In this condition, symptoms include irritability, impaired mental function (memory loss, inability to concentrate) and lethargy. When it drops too long, an individual can lose consciousness.

For those that have high blood sugar, this too can pose a number of problems. This condition is called ***hyperglycemia***. Diabetes is the most common problem caused. There are others including kidney, eye and nerve damage as well.

Diabetes is the main problem for those that have high blood pressure. Diabetes can cause a variety of complications including doubled risk levels for cardiovascular disease, chronic renal failure, retinal damage (which can lead to blindness) nerve damage, erectile dysfunction and the inability for the body to heal well. When infection sets in, it may spread quickly, which is the case of gangrene which may then require amputation to stop it.

One study done at the Johns Hopkins Bloomberg School of Public Health found that a patient that is able to lower their blood sugar levels will reduce their risks of coronary heart disease. This is the case for both those that are suffering from diabetes as well as non diabetic patients.

The study found that long term blood glucose levels predict the level of heart disease risk that you face.

Indeed, these risks can end a person's life early and should be enough reason to consider making lifestyle changes that can improve your blood sugar levels. Yet, often, it is not enough.

Those that do suffer from high blood sugar levels are often depressed, have a low self esteem and are generally unhappy. The fact is that by improving your body's level of blood glucose, you can improve these situations as well.

Improving blood sugar levels is the key to avoiding or reducing your health risks here. Throughout the next chapters, we touch on several key ways to make this happen.

Why Is Your A1c Level Important?

The importance of daily testing your blood sugar levels is so that YOU know where your day will take you. However your A1c Blood Test will tell your Health Care Team the truth about your blood glucose levels over the period of 3 months time. Throughout a diabetic's day there will be fluctuating blood glucose readings when testing with a personal monitor and while blood glucose monitors allows diabetics' more control in their daily lives it is not totally perfect view your testing numbers. Having the hemoglobin A1C test is the most reliable way to measure just how true your blood glucose has been and a truthful look at whether or not you're playing games or being successful with your new life as a diabetic.

But why does the hemoglobin A1c show a more accurate view of your blood sugar levels? In the most simple of terms; sugar at elevated levels starts adhering to your body and sugar really likes to dig its hooks into the proteins passing by as red

blood cells. With sugars attached to the red blood cells, they circulate through your body for the next 3 months which is the life expectancy for red blood cells and by using the A1c test it will provide your Health Care Team with a very reliable view of your last three months.

- Most people are in non-diabetic normal ranges of 4-5.9 %.
- Your goal is to strive for less than 7.0%.
- In out-of-controlled diabetics, its 8.0% and above.

The A1c Blood Test should be given to you at least 3 times a year so that you can stay in control of diabetes. (Appendix A)

Chapter 2: The Diabetes Diet That Lowers Glucose Levels

When you are first told that you have diabetes, it is likely that you will become worried, overwhelmed and even scared. These are normal reactions that can be treated with proper care. One of the first things that your doctor will tell you to improve is your diet. “Improving your Diet” can also be called “Improving your Lifestyle.” To improve your lifestyle with a diet that is diabetic oriented is one of the best diets for everyone in your family as they will be benefiting from the healthy improvements too.

Diet is a word that many people simply hate. Diet is a word that often brings out the feelings of hate, loathe and boring foods. That’s not necessarily important here. Instead, it becomes important for you to make small changes that will have a great impact on your diabetic conditions and most importantly your high blood sugars.

One of the most beneficial methods for treating and lowering blood sugar is through your diet. The most important considerations are:

- Moderate sized portions
- Healthy foods
- Regular mealtimes

The American Diabetes Association provides a wide range of tips and methods to making these things reality. This non- profit organization is the ideal location for improving your health when you suffer from diabetes or high blood sugar in general.

Let’s take a closer look at the important parts to a diabetic diet to lower blood sugar.

Improving Your Diet - In 6 Steps

The following steps are to help by improving your diet and to help lower your blood sugars levels. Keep in mind that making one to two changes at one time from each of the 6 steps offers a transition into a healthy diet, a transition that even family members will benefit from . Here are suggestions that will help you make the changes easier.

About Carbohydrates: Diabetics that have high levels of blood sugar should not consume too many carbohydrates however they should not be cut out of your diet, either. Although some diets recommend extreme to low carb diets most doctors say that a diet full of the right types of carbohydrates is the real key.

Carbohydrates are your body's main fuel for energy. When you consume them, the digestion process breaks down the sugars and the starches (which are called simple carbohydrates and complex carbohydrates respectively) into blood sugar.

This need is not something that can or should be avoided. As we mentioned earlier, more than half of your servings should be made of the right types of carbohydrates.

Also an important factor is when you consume carbohydrates. Maintaining a steady blood sugar level is important for those with high blood sugar. Therefore, try to balance your carbohydrates throughout your meals and snacks for the day this will keep you from feeling hungry and will help curb the highs and lows in your blood sugar levels.

Step 1: Increase Complex Carbohydrates In Your Diet

Complex carbohydrates when eaten become glucose that grab on to each other forming a tight chain of glucose. This chain of bonded glucose forces your digestive enzymes to *work harder* to access the glucose, breaking it into pieces for quicker absorption through your intestines. Because the digestive enzymes must work harder to be absorbed the complex carbohydrate will stay in the digestive system longer. With a slower absorption your body will have a longer and steadier supply of energy plus it will limit the amount of glucose your body converts into stored fat.

In choosing complex carbohydrate for your meals remember that the more complex they are, the lower they are in carbohydrate grams. 😊 *In the complex carbohydrates you eat, your first choice should be low carb vegetables then whole grains, wheat pasta, nuts and seed all which are a better choice and full of fiber and nutrients.*

The first column of complex carbs includes vegetables for a good reason: they are packed with nutrients and fiber but most importantly they are very low in carbohydrate and calories so fill up your plate. The next two columns are healthy choices that are very high in fiber and allow your blood sugars to slowly rise and fall for a feeling of long-term fullness.

Complex carbohydrates choices should include a balance of vegetables, whole grains and/or legumes high in fiber whenever possible to improve the lowering your blood sugar levels.

Complex Carbohydrates		
Healthy Carb Choices		
Spinach	Whole Barley	Yams
Turnip Greens	Buckwheat	Carrots*
Lettuce	Buckwheat bread	Potatoes*
Water Cress	Oat bran bread	Peas*
Zucchini	Oatmeal	
Asparagus	Oat bran cereal	Soybeans
Artichokes	Museli	Lentils
Okra	Wild rice	Garbanzo beans
Cabbage	Brown rice	Kidney beans
Cauliflower		Lentils
Celery	Multi-grain bread	Navy beans
Cucumbers	Whole meal spelt bread	Split Peas
Dill Pickles		Pinto beans
Radishes	Yogurt, low fat	Hummus
Broccoli	Skim milk	*Carrots, Potatoes and Peas are actually high in Natural "Simple Carbs" but also high in fiber.
Brussels Sprouts	Soy milk	
Eggplant		
Onions		

Step 2: Balance Meal Planning With Simple Carbohydrates

Most people think that Simple Carbohydrates are the BAD carbs and need to be avoided at all cost, but the reasoning behind this is due to how over-refined, processed and stripped of nutritional value these carbohydrates have become. However not all simple carbohydrates are bad; Fruit is Nature's Natural Simple Carbohydrates and when eaten in moderation and combined with Complex Carbohydrate can aid in your weight loss program.

It is the refined foods and processed foods that contain white flour, white sugars and high carb fillers. These are considered the "bad" simple carbohydrates. Unless you cook from scratch at home you are probably eating 80-90% of your food from

this column. Fast food restaurants, boxed mixes, sodas, cakes, fruit juices, most cold cereals are just a few of areas that we pick up empty calories, high “bad” carbohydrates, excess fats with little to no fiber or proteins and we also pick up weight gain.

Simple Carbohydrates	
Natural Low Carbs Aids In Weight Loss	Refined-Processed & High Carbs Avoid or Limited Amounts
Apples/ Kiwi/ Melon All Dark Berries/ Raspberries Strawberries/ Cranberries/ Cherries Grapefruit/Oranges/ Lemon Peaches/Pears/Plums <i>(*does not include fruit juices)</i>	Table Sugar/Powdered/Brown/Honey Candies/Fudge/Toffee Jams/Jellies/Chutney Sodas/Fruit Juice/Corn Syrups Cakes/Cookies/Donuts/Muffins Pancakes/Waffles

Simple carbohydrates are also converted to glucose in your body but with a much different result. These simple sugars are converted very quickly and are immediately ready to be absorbed into your body. The problem is that when you overload on simple carbohydrates your body doesn't have to work to absorb them and when in excess they convert to stored body fat.

The natural sugars in fruits make it a simple carbohydrate but are a good way to satisfy the sweet tooth that you have without consuming the “bad” simple carbohydrates such as over-processed foods and refined sugars that are not good for you. This does not mean that you can eat unlimited amounts of the natural sugars as they are still a simple carbohydrate and can raise your blood sugars quickly. Remember moderation and balance.

Fruits are one of the simple yet complex carbohydrates that are high in simple sugars but their digestion is slowed down because most fruits are high in fiber.

Keep an eye on how much you are eating throughout the day. 😊 Fruit juices fall

under the “bad” simple carbohydrates as they do not contain fiber and your body treats juice just like it would a jelly filled donut!

*Remember your meals should contain **both** complex and simple (natural) carbohydrates with a majority coming from the complex.*

Step 3: Importance of Fiber

Consume 25-50 grams of Fiber in your diet plan daily

Another part of the right kinds of carbohydrates are the ones that are high in fiber, someone looking to lower their blood sugar should be watching their daily grams of fiber. As you learn to manage your diet better, learn to read food labels which will help you to determine how many nutrients, including fiber, are in the foods you consume.

Your goal here should be between 25 and 50 grams of fiber each day. Where does it come from? What should you look for?

There are two important factors to consider here. First, all parts of plant type foods that your body can't digest are called dietary fiber. There are two types:

- **Insoluble Fiber:** Here, you have fiber that will keep your body moving waste materials out. This type of fiber can be found in whole wheat products, wheat bran, and nuts in a variety of vegetables. Increase the amount that you eat to lower blood sugars.
- **Soluble Fiber:** As a very important tool in helping you to control and lower blood sugar, this type of fiber is a must. It dissolves in water and forms a

gel type material. It can also help to lower cholesterol levels. You will find soluble fiber in carrots, barley, oats, peas, beans, apples, and citrus foods.

Step 4: Protein Consumption

It is very important to reducing your risk of coronary problems by eating the right types of proteins. Foods that are high in saturated fat are not easily consumed and can potentially clog your arteries. Unlike the other products listed above, it is very important to note that here we are not talking about servings but are talking about **ounces**.

Protein – Building Muscle		
Lean Meat	Type of Cut/Meat	Benefits
Chicken, Turkey White Meat	Breast, Skinless	Very Lean Protein
Lean Pork	Tenderloin, Top Loin Chops, Center Rib Chop, Sirloin Roast	Lean to Very Lean with Tenderloin as Lean as Chicken Breast
Fish/Seafood	Salmon, Trout, Bass, Tuna, Shrimp	Very Lean Protein, Some contain Omega3s
Eggs/Egg Whites	With or Without Yolk	Egg White is all Protein, Yolk includes Fat/Cholesterol/Protein
Beans/Legumes	Navy, Kidney, Pinto, Black, Garbanzo, Black Eye	High Fiber, Plant source that is a Complete Protein with ALL the essential Amino Acids
Dairy	Low Fat Milk, Yogurt & Cheese	Look for High Protein, Low Carbohydrate and Fats
Protein Powder	Whey, Casein, Egg & Soy	Low Fat, High Protein, Quick and Convenient Alternative
Lean Beef	Top Round & Sirloin, Flank Steak and 90% lean Ground Beef	Source of B vitamins and iron *Should limit weekly amounts

Chicken, Pork, Fish/Seafood and Eggs are very lean animal proteins, beans and legumes are a high fiber plant protein and include amino acids. Your lean beef consumption should be limited to 1-2 times a week.

Alternative Proteins

The alternative proteins like; dried beans, cheeses, peanut butter, eggs and tofu are a great source of non-animal proteins.

Servings here are measured by their comparison to one ounce of meat:

- One egg is the equivalent to one ounce of meat
- ¼ cup of cottage cheese is the equivalent to one ounce of meat
- ½ cup of tofu is the equivalent to one ounce of meat
- 1 Tablespoon of peanut butter is the equivalent to one ounce of meat

Dairy is an important part of the diabetic's diet because of the calcium it provides. Most contains good proteins as well. Yet, you have to be careful when selecting milks and other dairy products. It is important for these to have as little fat as possible. Non fat is the best route to take, but low fat is often better because of its improved taste!

Low-fat Milk and Yogurt

Including sources of dairy products in your diet is an easy way to get calcium and high-quality protein. Many dairy products, like no sugar added, fat-free yogurt, can be eaten as a dessert with only about 15 grams of carbohydrate and 100 calories per 6 oz container.

What are the best choices?

The best choices of dairy products are:

- Fat-free or low-fat (1% milk)
- Plain non-fat yogurt
- non-fat light yogurt without added sugar
- unflavored soy milk

If you are lactose intolerant, you may want to try fortified soy milk as a source of calcium and vitamin D.

Here are a few other guidelines to remember.

- Eat lean cuts of meat, the leaner the better.
- Eat more pork, chicken and turkey over beef products.
- Try to consume protein alternatives if possible.
- Remove the skin from the meats that you eat as this will store a great deal of fat.
- A portion of protein should be no larger than the size of your palm or a deck of cards.
- Incorporate more legumes (beans) into your diet such as kidney beans, navy beans, pinto beans and lentils.

Although many Americans do not consume much fish, it is one of the best sources of nutrients and some are high omega 3 fats. Eating more fish during the week can help to lower your blood pressure and blood sugar.

The best way to eat more fish is to try a few new recipes if you normally don't eat much fish. Your goal is to consume at least two to three meals of fish each week. If you don't have any experience with preparing fish, take a class, use web videos or even television to help you.

Step 5: Good Fats, Bad Fats, Know Your Fats!

Fats should make up 25% of your daily nutrients.

We all recognize the Fat-facts, there are two basic types of fat; the first are the bad fats, Saturated Fat and Trans Fat.

Saturated Fats			
Fat	Found In	Problems	Recommended
Saturated Trans Fats	Animal Products, Coconut & Palm Oils	Heart Disease, Increases LDL “bad” Cholesterol and Reduces HDL “good” Cholesterol	Limit Artificial Trans Fats to less than 2 grams a day. Remember labels that say, “trans fat free” can have up to 0.05 grams per serving.
Saturated Hydrogenated Fats (Artificial Trans Fats)	Fried Foods, Margarines, Manufactured Processed Foods		

Saturated Trans Fat – fat that come predominantly from animal sources. It is this type of fat that raises your blood cholesterol levels. This is a type of fat that comes mainly from animal sources of food and can raise your total blood cholesterol levels along with low-density lipoprotein otherwise known as (LDL) cholesterol.

Hydrogenated Trans fat – are the fat from both animals and natural foods that can happen naturally, Trans fats are created during food processing through partial hydrogenation. This process creates a more stable fat product, ones that are easier to cook with and the likelihood of spoilage is greatly reduced compared to naturally occurring oils. These Trans fats are called industrial or synthetic trans fats.

The research on synthetic Trans fat show an increase in unhealthy LDL cholesterol and lower your healthy (HDL) cholesterol. This can set you up for an increased risk of cardiovascular disease.

One of the easiest ways to identify a saturated fat or Trans fat is when remains solid at room temperature giving it the name “solid fats.” Beef fat, pork fat, stick margarine, shortening, and butter are all known as Solid Fats. Both types of solid fat can increase your risk of cardiovascular disease and may also contribute to your risk of type 2 diabetes.

The second types of fats are the good fats known as polyunsaturated fats and monounsaturated fat.

Unsaturated Fats			
Fat	Found In	Benefits	Recommended
Polyunsaturated	Vegetable Oils	Lowers Cholesterol & Triglyceride Levels	
Polyunsaturated Omega-3s	Salmon, Trout, Catfish, & Mackerel Fish, Flaxseed and Walnuts	Healthy Heart, decreases Heart Disease	Should have 2 servings of fish each week.
Monounsaturated	Olive, Canola & Peanut Oils — Olives, Avocados, hazelnuts, Almonds, Brazil Nuts, Cashews, Sesame Seeds, Pumpkin Seeds	Reducing Heart Disease Vitamin E source	Add these items to your menu throughout the week.

Polyunsaturated – is a type of fat found largely in plant based foods and oil. We are finding that when you are eating foods high in polyunsaturated fats (PUFAs) it has the potential to greatly improve your blood cholesterol levels, decrease the risk of heart disease and may be helpful in decreasing the risk of type 2 diabetes.

Polyunsaturated Omega3s – Is one of the healthiest fats that is especially beneficial to your heart. Omega-3s, found in some Fatty fish, like Salmon, Mackerel and Catfish and this fat appears to decrease the risk of coronary artery disease, help protect against irregular heartbeats and even aid in lowering your blood pressure.

Monounsaturated fat – can be found in a variety of food and oil products. Research is proving that we can improve our good cholesterol levels and reduce your chance of heart disease by eating monounsaturated fats (MUFAs.) For you the diabetic the new about MUFAs is even better when you see the may benefit in your insulin levels and blood sugar control.

Step 6: Consider Liquids Carefully

Liquids in your diet are just as important to think about as the foods. There are several key areas that you can improve your blood sugar levels in this area.

- For dairy products (including cheeses and yogurts) look for non fat varieties. If you consume whole milk, drop to 2 percent. Skim milk is even better. Low fat cheese and yogurt is a good route to take as well. (Go with low fat over non fat as the taste difference won't be much.) As of 2010 we have seen milk companies that are producing low and non-fat milks that taste like 2%, read the labels as these milk products are heavier in carbohydrates.
- Drink more water, green teas and more calorie free drinks. *Best Choice.
- Avoid soda pop that is full sugar, fruit punch, sweet teas, and other sweetened drinks.
- Avoid diet sodas and other 0-calories drinks, check drinks for sodium content.

- Cook in the right liquids, too. Never use oils that have Trans fats in them. Look for those that are healthier such as extra virgin olive oil.

These five steps are the first and most important changes to make in your diet to see improvements in your blood sugar numbers. While it is important for you to focus on healthy eating, you may find yourself dreading the “don’t” list of foods.

Although those with severe diabetic conditions should never push their food intake by eating highly sugared foods, those that have lower levels of diabetes may be able to consume foods on a very limited basis. Go back to what these high sugared foods should be: a treat. They shouldn’t be consumed daily, but only on special occasions and only when your doctor/dietitian okays it.

Importance Of Meal Portioning

An important part of lowering blood sugar is monitoring the amounts of foods consumed. Today, many people are suffering from diabetes and high blood sugar due to over-consuming the wrong foods. Now that you understand what foods you should be consuming, the next step is to fully understand how much you should be consuming and what amounts of each food.

One of the first things is to speak with your doctor, ask him/her about a food plan or ask your doctor to suggest a diabetes dietitian. A dietitian has more time to sit down with you and answer question you will have about this lifestyle change you are about to introduce to yourself and your family.

The number of calories consumed is directly related to the amount of food eaten. Yet, each person’s current body structure and size as well as health concerns and age determine what number of calories should be consumed.

You and your health care team should determine if the diet should be made up of more calories (to gain weight) or fewer calories (to lose weight) or maybe you just need to maintain your current weight. Only your doctor or dietitian can determine what the right number of calories will be for you to consume.

It is important to remember that the more complex the carbohydrate you eat, the less “spiking highs” and “quick-falling lows” you will experience and the fuller you will fill for a greater amount of time. That is why you need to balance the carbohydrate portions of your meals into both **simple** carbohydrates and **complex** carbohydrates, with a major portion coming from the complex carbohydrates.

It is recommended to never go below 1200 calories if you are a female, because your body can go into starvation/survival mode and it is possible that you might actually gain weight because your body is trying to save you by storing fat, also it can create potentially serious damage to your body. (1500 calories if you are male).

The general recommendation is to have 55-60% of your calories come from carbohydrates (I use a 55Carb-25Pro-20Fat ratio.) Since carbohydrates contain 4 calories per gram, you should eat between 250 and 300 grams (divide 1,000 by 4 and divide 1,200 by 4) of carbohydrates each day.

While this may seem like a large amount, the carbohydrates are the body's preferred source of energy. While it can use fat and protein for energy, carbohydrates are much more efficient at delivering the energy you need.

Pass-up the Simple carbohydrates that are found in candies, soda, starchy-vegetables, dried fruits and anything made from white flour. These carbs are high in sugars and most of them provide you with little to zero nutrients.

I prefer to count the ratio of Carbohydrate-Protein-Fat grams instead of counting calories. If you are eating a 1200 calorie a day diet plan then you know that your carbohydrates for *the day* should be 165 grams or 660 calories (mostly from complex carbs) your protein for the day should be 75 grams or 300 calories and that your fat for the day should be 26 grams or 240 calories.

Most people do not have any idea how many calories are in their foods so instead of counting calories then, try to consume the right portion ratio of the required nutrients needed for your body. The great part about counting your carbs, proteins and fats is that almost everything we eat today has the info on the side of packaging for easy charting.

I base my portions on a ratio of:

- Carbohydrates = 55% = 165g = 660 calories per day
- Proteins = 25% = 75g = 300 calories per day
- Fats = 20% = 26g = 240 calories per day
- *See Appendix C for 1500, 1800 and 2000 calorie ratios*

Summing Up

Your diet is the largest and most important part of lowering blood sugar. Because blood sugar is triggered by the foods you consume, it should be at the top of your list of methods to lower your blood sugar. Incorporate all of these changes into your diet to lower blood sugar. Work with your Health Care Team or Doctor, Test

your Blood Sugars daily, (2-5 times) go online to Diabetic Forums it will amaze you with all the incredible information , most of all Trust Yourself you are in control of your blood sugars and you can make it work.

Chapter 3: Exercise For Controlled Blood Sugar Levels

While food remains one of the largest factors in determining the blood sugar levels that happen in your body, exercise is another important area to fully understand.

There are many important roles that are played by exercise including a variety of benefits that come from just moving your body. The benefits of exercise are seen in the reduction of high blood sugar levels as well as in the ability to maintain a healthy weight. Indeed, it is connected with the ability to reduce the risks of heart disease and coronary problems as well.

For all of these reasons, the importance of exercising your body should be something you pay close attention to. With various elements to consider, your goal should be to focus first on what your doctor tells you.

Some individuals that have very high blood sugar levels or very low blood sugar levels should not exercise vigorously without doctor approval. Moreover, you should always have a doctor give you a physical before starting on an exercise regimen.

Nevertheless, it is such a crucial part to maintaining low blood sugar levels, that we will explore the realms of improving your overall health here.

Talk with your doctor about any limitations that you may have on exercising. Keep a record of your blood sugar before, during and after exercise to make sure it stays at a healthy or normal level.

The Benefits of Exercise

While not many enjoy exercise, anyone can tell you that they know they should be doing it. In fact, you probably realize the importance of it yourself. In relation to how it affects your blood sugar levels, though, you may not realize the benefits so easily. There are several including the following.

Improve Your Control

One area in which exercise can better your blood sugar levels is by giving you more control. As you exercise, your muscles burn sugar for the fuel to power your movements. In turn, this reduces the amount of blood sugar stored in your body.

The more that you do, and the more vigorous you exercise, the more benefit you will see in this regard. And, it will last longer the more you can do.

For those that have Type 2 Diabetes, exercise has an extra benefit in this manner. Because of the way that exercise works with your body during exercise, your body actually increases its sensitivity to insulin. That means that you will need less insulin to help pull sugars into your body's cells. In this regard, it will help to lower your need for insulin provided through medications.

Improvements For Your Heart

An important factor in exercise is improving your risk factors for various health conditions. Those that suffer from diabetes or others with high blood sugar levels are at a doubled risk for heart problems. But, exercise can help to lower that.

Diabetics are much more likely to deal with heart conditions like heart attacks, strokes, cardiovascular disease, high blood pressure and heart disease in general.

All of these conditions can be improved with exercise because it:

- Improves the blood's flow through your body.
- Increases your heart's ability to pump often called its pumping power or pumping strength
- Improves the cholesterol levels

Exercise can improve your overall heart health on the right regimen.

Weight Management

Yet another way that exercise can improve your body's function is through helping you to maintain a healthy weight. Many that suffer from diabetes or high blood sugar are overweight, which triggers high blood pressure, organ failure and heart conditions. Diabetes patients often suffer from many weight problems (some even have weight that is too low.)

Exercise helps your body to burn calories and therefore keeps them from being stored. The right type of exercise will burn through stored fat as well, which reduces your risks of all of these health conditions.

Monitoring Blood Sugar When Exercising

An important part of exercising with high blood sugar is monitoring your blood sugar levels. As we mentioned, you must first talk with your doctor to get an okay to move forward with any exercise program.

You also want to ask him or her when you should exercise. This is especially important for those that take insulin. You may need to change the time that you exercise or the time that you take this medication to avoid complications.

For the first few times that you exercise, it is essential that you test your blood sugar often to make sure that you know how your body is responding to the exercise. You need to test three different times:

- First before you begin exercising or warming up
- Second during exercise
- Third after you have exercised and done a cool down

This will help you to monitor for potentially fatal blood sugar movements up or down.

It is first important to test your blood sugar prior to exercising. For those taking insulin, do this twice. About half an hour before you begin to exercise test your blood sugar, then do it again right before exercising. This gives you a clear indication that your blood sugar is stable and allowable for exercise.

If it is lower than 100 mg/dL, it is likely that it is too low to exercise right now. In this case, take a small carbohydrate snack such as fruit or crackers before you begin exercising. For those with 100 to 250 mg/dL, this is a good sign and allowable for exercise.

If your blood sugar falls at 250 mg/dL or higher, then you must be very cautious. Test your urine for ketones which will tell you if the body has enough insulin to control your blood sugar. If it is high do not exercise as this can cause a serious condition known as ketoacidosis. Instead, wait to see the level of ketones drop.

If your blood sugar level is 300 mg/dL or higher then this is much too high and exercise should not be considered. Wait until it is much lower to get started.

For those that do get to exercise, it is also important to check your blood sugar levels during a long exercise regimen. This means every 30 minutes you should consider checking your blood sugar. This is important if you are extending a routine, trying something new or are completely new to exercising.

For those that have a blood sugar that drops to 70 mg/dL or lower, or those that feel shaky or weak, confused or nervous, stop exercising. Your blood sugar level has potentially dropped too low. You should try to raise it through eating $\frac{1}{2}$ cup of fruit juice, by taking two to three glucose tablets or by eating some hard candy or drinking $\frac{1}{2}$ cup of soda, not diet.

Test your blood sugar again at this point to make sure it has elevated before continuing with your exercise regimen. It should be over 70 mg/dL before you get back to exercising again.

Finally, it is important to find out how your body did by checking your blood sugar levels after you workout as well.

As soon as you stop exercising, test your blood sugar level. You should also check it several times over the course of two to three hours. This is essential for a number of reasons.

When your body exercises or is told to work hard, it must use the reserved sugars in your muscles and in the liver to fuel the demand. After you complete your

exercise regimen, it must rebuild those reserves. To do this, it pulls the sugars from your blood. This is the benefit that you want to see, too.

The harder you are able to work out, the longer the length of time will be that your body needs to do this and therefore the lower your blood sugar will be doing those times. Yet, it could drop too low, which is why it's important to monitor it over time.

How To Exercise

The importance of exercising you should now understand. You also know the importance of monitoring your blood sugar when doing exercise both before and afterwards. But, how should you exercise?

This question offers many opportunities and your individual situation will ultimately determine the right path to take. Again, the first place to stop is with your doctor who will tell you several things:

- What type of exercises should you do?
- What types of exercises are too risky for you?
- What should be the goal of your exercise regimen? Weight loss, cardiovascular health, a combination or something else?
- How much exercise can you do without affecting your overall health?
- What symptoms or concerns should you be looking for while exercising?

Your doctor will assess your situation to determine what potential benefits can come from exercising for you. For those with high blood sugars, the number one goal will be to lower that number, which exercise can do.

If you have other health problems associated with exercise, these too much be closely considered.

It is often recommended that you do a combination of exercise routines. Yet, the most common is that of aerobics.

Aerobic exercise has to do with the heart and the body's ability to pump blood to all of your cells. When you exercise, your cells scream for more fuel, which your blood delivers. As we mentioned before, the pumping power of the heart can be increased through exercise and that comes into play with aerobics.

Because your heart must push blood through your body faster, it actually increases its strength in doing so, somewhat like a body builder uses repetition to increase his muscle's size.

For those just starting out though, it is very important to work on a small step basis. The best exercise for those that are struggling with weight or high blood sugars is walking. Walking is also a simple way to control the strains that you place on yourself.

Other beneficial aerobic exercises to consider include bike riding, swimming, jogging, aerobic dancing, and playing a sport. If you can't get out and do these things, you can do many of them at home. For example, there are a number of chair exercises that you can do.

When you first get started, move slowly through the process so that you gradually increase what you are doing in intensity and in length of workout. Slowly, you'll want to increase the length of time that you are exercising. At the same time,

slowly add more intensity to your workout, pushing your body a bit farther every time you can. Your doctor or a physical trainer can help you to find the best results here.

Exercise Tips

Remember these important tips for exercising.

- Warm up before you begin any exercise regimen. This means at least ten minutes of stretching or otherwise muscle warming exercises.
- Spend 5 to ten minutes walking or doing other low intensity exercises before moving into something larger.
- Spend 5 to ten minutes stretching your muscle groups.
- Your goal should be to work out at least three times per week for 20 to 30 minutes at a time, depending on your exercise tolerance level.
- Do a cool down which is a matter of repeating the 5 to ten minutes of stretching and slow walking after you have worked out.

It is also important for you to have the right shoes on while exercising. Many people that have high blood sugar levels also have problems with nerves and muscles in their legs and feet. If you have these conditions or you notice problems like blisters or sores on your feet, talk to your doctor about them before continuing.

It is also just as important to get enough fluid while exercising. You should drink enough water or other non sugar drink before, during and after exercise. Drinking a good amount of water will help to keep your body hydrated, something that is easily slipped when you are working out with any level of intensity.

As we mentioned, it is very important for you to monitor your blood sugar before, during and after your exercise regimen. While there are risks of exercising when you have a blood sugar that is too high, it is still beneficial to most people to exercise.

In many ways, the risks of not exercising are greater than the risks of a doctor approved exercise regimen.

Chapter 4: Other Methods For Lowering Blood Sugar

The fact is simple. Nothing besides monitoring a good diet and exercise regimen can do as much for you in managing your blood sugar levels. Nevertheless, there are several other solutions that can work for you as they have worked for many others.

Medications are one of these. You and your doctor will talk about your need for medications, which generally will include insulin products that will regulate your body's ability to bring sugars from your blood stream into your body's cells for use.

There are also many different types of home remedies or unproven methods of treating and lowering blood sugar levels. Anyone can benefit from these, but they aren't guaranteed to work for everyone. While science still works on proving that they work, you can benefit from them.

What's more, there are many other small changes that you can make that will make a significant change in your lifestyle as well as improve your overall blood sugar levels. Simple, and maybe something you want to do, these elements can truly improve your health.

But, first, let's mention some of the medications that are used to lower blood sugar levels to acceptable levels, which most individuals that deal with high blood sugar need to use.

The Use Of Medications

There are a variety of medications that can be prescribed by a doctor to improve your condition. For those that face pre-diabetic conditions, the first goal will be to treat the condition with weight loss, exercise and dietary changes as this may be all that is necessary. For others, medication is necessary.

Either a single medication may be used or a combination of them, depending on your individual health needs and other conditions you may have.

Some will slow the absorption of sugars into your bloodstream after you eat. Others help by limiting the amount of sugar that is released into your bloodstream by your liver specifically. Inhibitors are used to block enzymes that can break down specific proteins which in turn cause your body to release insulin into your body.

Other medications work by improving the stimulation that your pancreas gets to release more insulin or can enhance the way that your tissue reacts in order to become more sensitive to insulin.

Doctors also look at other health conditions you may be experiencing. If they feel that one medication may be better for you, and you aren't sure why, ask.

There is no doubt that the need for medications is very real and in most cases is something that cannot be avoided. Indeed, if you are taking them you should never stop taking them without talking to your doctor beforehand as side effects can be extreme.

Yet, there may be some methods to improving your body's blood sugar level through other treatments other than medications.

Herbs and Spices Can Be Effective

You may or may not have heard about the research being done on a variety of spices that claim that they can actually be able to regulate blood sugar.

Cinnamon and more. . .

One commonly known and talked about spice that is showing the benefits that are necessary in lowering blood sugar is that of cinnamon.

Cinnamon that is taken as a part of your daily diet has shown, in various studies, to help lower blood sugar levels. In one particular study, those that took cinnamon in the form of a capsule one time per day over the course of 30 to 40 days were able to see a reduction in their blood sugar levels by some 20 to 30 percent.

How does this happen? Researchers believe that cinnamon works with the body's sensitivity to insulin. By lowering your reaction to insulin, your body allows blood sugars to enter into cells easier, therefore lowering the amount that remains in your bloodstream.

You can take advantage of this benefit right away, especially if you like the taste of cinnamon. Researchers believe that adding just a ½ teaspoon to your diet daily, perhaps sprinkled over breakfast can begin to lower blood sugar levels. It may take some time to see results, but it's a tasty way to lower your blood sugar. Cinnamon can be purchased in capsules for convenience.

Cinnamon is not the only Spice or Herb that will help you control your diabetes. Here are a few better known herbs and spices that can help you. Please remember to consult your Health Care Team/Doctor before you make ANY changes to your diabetes care.

Herbs, Spices and Diabetes	
Herb/Spice	Effect on Diabetes & Heart Disease
Capers	Increases Insulin Sensitivity, Copies Effects of Insulin, Lowers Blood Lipids, Antidiabetic, Heart Disease, Lowers Cholesterol and Triglyceride Levels
Cinnamon	Increases Insulin Sensitivity, Copies Effects of Insulin, Stabilizes Blood Glucose Levels, Lowers Blood Lipids, Antidiabetic, Heart Disease, Anti-Inflammatory, Powerful Antioxidant,
Fenugreek	Lowers Blood Lipids, Antidiabetic, Heart Disease, Lowers Cholesterol and Triglyceride Levels, Blood Thinner, Insulin Resistance, Reduces Oxidation of Lipids, Effective against Diabetes related Cataracts
Ginger	Prevents Cardiovascular Disease, Increases Insulin Sensitivity, Anti-Inflammatory Properties, Effective COX-2 Inhibitor, Suppresses Absorption of Dietary Fats from intestines, Counters Weight Gain/Obesity
Coriander, Cilantro, Chinese Parsley	Enhancing Secretion of Insulin, Eliminates Lead Deposits in Kidneys/Bones, Reduces Atherosclerosis
Garlic	Blood Glucose Lowering, Reduces Fat Absorption, Appetite Control, Heart Disease, Reduces Heart Attacks/Thrombotic Strokes, Cancer Fighting Agent

More...Herbs & Spices

Herbs in general can be beneficial to your health. While most people reach for salt to improve the taste of their food, you can improve your health if you reach for a few more tasty choices.

For those that haven't really added many different spices to their diet, it can be an easy way to add a lot of flavor to foods that are new to you on your diabetes diet.

To get started, consider adding these herbs and spices into your diet:

- Great choices include parsley, garlic, thyme, oregano and rosemary. Try them on meats, vegetables and even fruits.
- A blend of Sweet Basil and Oregano in a shaker on the table is a great replacement for salt.
- Not quite ready to go salt-free then reduce the salt by 50 percent and add a mixture of one teaspoon of basil and one teaspoon of oregano (in the same amount as the missing salt) to your food.
- Fresh garlic is one of the best tools for improving health. It can lower blood pressure and improve your cholesterol significantly. You should try to consume as much as possible, but three cloves per day is recommended for maximum results.
- Rosemary is an excellent antioxidant which can help to prevent heart disease and cancers. Other antioxidant powerful herbs include thyme, basil and oregano. (That's a great combination for fighting off a cold, too.)

One of the largest drawbacks for many on a diet to reduce blood sugar levels is the missing sugar. Replace some of the sugar that you wish you could have with cinnamon or nutmeg. You can mix this into virtually any recipe and get enhanced flavor without the sugar.

Diabetes And Weight Loss

One of the most essential conditions of the body is maintaining a proper weight. It affects nearly every aspect of your life when you are overweight, even by just a few pounds. For the diabetic or pre-diabetic patient, being overweight can lead to premature death among other risk factors.

Therefore, one of the key methods to reducing the blood sugar levels you face is to reduce your weight.

A frightening statistic that should be noted here is that almost 9 out of 10 people that are newly diagnosed with type 2 diabetes are over their ideal body weight or are obese.

Those that manage to lower their weight can better manage their diabetes or even reverse their condition with proper management.

In addition to complicating diabetic conditions, being overweight also increases cholesterol levels and blood pressure rates pushing for an increase in heart conditions and sudden death.

Metabolic syndrome is one of the many conditions that those with diabetes face increasingly. This simply is a term (also called cardio-metabolic risk) that means that you have several key symptoms that can lead to heart disease. Those including being overweight, having high blood pressure and having high cholesterol. This coupled with diabetes is a dangerous recipe for anyone.

Those that have a BMI (Body Mass Index) of 25 or more are considered to be overweight. If you have a BMI that is higher than 30, you are considered to be obese. Those that have a BMI at 25 or more are at an increased risk for diabetes.

Another problem with being overweight directly relates to diabetic conditions. When your body is overweight, you have more insulin resistance. Insulin is an important part of regulating blood sugar levels. When it is working correctly, it helps the body to use sugar correctly as the source of energy that it is.

For those that have insulin resistance, the cells no longer will respond to insulin. They will not allow insulin in which means that no energy gets to the cells. The body counters this by producing more insulin to try and lower blood sugar levels. In addition to this, insulin resistance adds to cardio-metabolic risk factors mentioned above.

Losing weight is not something that many people want to face, yet it is an important factor in improving blood sugar factors. Most doctors and researchers believe the best way to do lower weight is to diet by decreasing caloric intake (which we revealed earlier) and by exercise (both aerobic and weight training can do this.)

Reducing your weight slowly, with the help of these methods can help you to step back from high blood sugar numbers and to regain some of your overall health. It will help you to reduce your risk of various health risks.

Relaxation Lowers Blood Sugar

Another method that you can incorporate into your daily life as a method of lowering blood sugar levels is relaxation. In today's rushed lifestyle, there is little hope of putting together a simple plan for relaxation. Yet, stress can do many things to our body's including cause complications of diabetic conditions.

Stress hormones happen to be at the bottom of this condition. These are able to trigger the release of extra sugar into your bloodstream.

For some individuals, increased amounts of stress over a long period of time and coupled with other conditions can actually bring on the onset of diabetes. If you have high blood sugar levels and you aren't sure why, it could be a life full of stress and brought them forward.

There is some good news here, though. As difficult as it may sound, reducing the level of stress that you are under can actually reduce your blood sugar levels significantly.

The best course of action is to take a step back and analyze the stressful factors in your life. What is it that brings tension to your shoulders and has you worried more times than not? Those are the conditions that need to be improved if at all possible.

Yet, you can also reduce your stress levels by carefully monitoring them and doing several key things to reduce them. Stress can be minimized in one of several ways, based on your need and your body's reaction. Try any of the following tips to improvement in your body's blood sugar levels by reducing stress levels.

- Deep breathing. Sit up straight and breathe from your lungs rather than your normal method. To do this, feel yourself letting your stomach muscles expand. Fully expand then and then exhale, slowly. Push the air out of your stomach. Do this again several times. As you exhale, imagine the stress leaving your body with the air. Try to do this about 20 minutes per day.
- Muscle relaxation. When you feel tension in your body, try this method of relaxation. Simply lie on your back with your arms at your side. Your goal is to relax each muscle group one at a time, imagining that the stress is leaving your body at the same time. Start with your toes, feet, ankles and work your way up your body, targeting each individual muscle group. Then, tense each group of muscles one at a time, hold for ten seconds and then release them. Work through your entire body in this manner.
- Calm your thoughts. For many, stress is not the only thing that causes harm. It is also the anxiety, worried and the feeling of being overwhelmed. Although it may feel very difficult to do at first, force yourself to think of the situation rationally. Ask yourself, “What is the worst case scenario?” Relax what the likely outcome will be, not the worst.

There are many other ways that you can reduce stress in your life too. Consider yoga, for example. Find something that you enjoy doing and make it a habit. Even something simple like gardening can help you to have an outlet of positive which will help to reduce your level of stress overall.

Reducing your level of stress can significantly improve your overall well being and help you to reduce blood sugar levels.

Fight The Urge With SNACKS

You heard me right!

If you are eating a well balanced diet following the 55-25-20 ratios there is room for planning a snack after your workout, after work, or after a day where “lunch was early but dinner will be late” and now you are testing low. Then grab a 7-15 gram carbohydrate booster you will still be in control of your blood sugar levels and you will also be in control of YOU!

Snacks Ideas to Boost Your Blood Sugar When Low

- 1-2 Tbls. Hummus with raw veggies
- Salsa with Laughing Cow Cheese on 5 whole grain crackers
- Low-Fat Yogurt with Cinnamon stirred-in
- Whole Fruit Juice Bar/Popcicle, many are under 80 calories
- Fudge Bar, under 80 calories!
- Hand full (1oz) of Almonds, walnuts, pecans, peanuts, and cashews contain the healthy monounsaturated fats. (1oz fits in the palm of your hand)
- 1-2 Tbls. Peanut Butter on whole grain crackers
- Small Apple cut into slices, sprinkled with Cinnamon
- Low-Fat String Cheese

Snacks with Zero Blood Sugar Effects

- Green Tea with Mint Tea, Served Iced or Hot
- Hard Boiled Egg
- Thin Sliced Turkey, rolled
- Sugar Free Jello

. . .and finally!

For those that have high blood glucose levels, there is a realization that you must acknowledge. You have a life threatening condition that can worsen with neglect and denial, but you also have a condition that responds to healthy changes in your lifestyle.

Is giving up the carbohydrates you love worth improving your health and avoiding heart conditions? By all means it is. By all means, it is not easy to make any of these changes. Yet, those that do make them will find improvement in their health across the board. Many of you will find yourselves feeling healthier than the people around you.

With your doctor and health care team's help, you can improve your over all well-being by reducing your blood glucose numbers. The process is direct. Start by improving your diet, get in enough exercise and feed your body a healthy lifestyle full of relaxation and taste.

You can lower your blood glucose numbers with a bit of work. Work with a skilled health care provider/doctor who is dedicated to you. Couple this with being dedicated to yourself and your well being. When you do accomplish your goals, it will be well worth it.

Appendix A - A1c Levels

Diabetes Blood Sugar Chart - Normal Blood Glucose Ranges

Upon waking up (and before breakfast), your levels should be between **80 and 120**. This is considered to be a healthy range.

Before meals your levels should also be between **80 and 120**.


Two hours after you eat meals, your levels should be **170 or less**.

Before lunch, it should drop back down to **80-120**.

Before you go to bed, it is ideal to be between **100 and 140**.

At 3am (while sleeping), it is ideal to be between **70 and 110**.

While fasting, it is ideal that you stay in the range of **70 to 100**.








HbA1c	Average BGL	
(%)	(mg/dl)	
5.0	96	In Control
6.0	135	
7.0	170	
8.0	205	Out of Control  Time to Change!
9.0	240	
10.0	275	
11.0	310	
12.0	345	

Personal A1c Log

Following your Doctor's orders A1c tests may happen every 3-6 months.

DATE	RESULT	DATE	RESULT

Appendix B - Personal Care Log

Personal Care Daily-Monthly-Yearly	Goal Target Range	Current Range	Achieved Goal Target Range!
A1c – Test. Taken up to 4 times a year or as Diabetic Doctor requires. This will give you an average of glucose over a 2-3 month period of time.	Less than 7% Ideal at 5%		
Blood Pressure. Taken at every doctor's visit. High blood pressure increases your risk of heart attacks, strokes, and eye and kidney problems	Less than 130/80 mmHg		
Cholesterol. Taken at least once a year. High LDL can make heart disease worse.	Less than 200mg/dl		
HDL Cholesterol. Recommended: More than 40 mg/dl for men More than 50 mg/dl for women	>40 mg/dl men >50 mg/dl women		
LDL Cholesterol. Recommended: Less than 100 mg/dl	<100 mg/dl		
Triglycerides. Recommended: Less than 150 mg/dl	<150 mg/dl		
Microalbumin. Measure this once a year. This urine test how well your kidneys are doing and if there is any damage due to high BSL.	<30 mcg of Albumin per mg Creatinine.		
Preventive Care		Received	Next Appointment
Vitamin D Test. Ask your doctor to order a 25-hydroxyvitamin test when you have your next blood work-up.	Optimum Level Approx. 50 nM/L		
Dilated Eye Exam. Have eyes examined once a year. High BSL and high Blood Pressure can damage the blood vessels in your eyes.	A check-up with No retinopathy Detected.		
Dentist Exam. At least twice a year have a complete check-up.	Check-up And Care		
Foot Examination. Do this daily and make sure you doctor checks your feet at every visit. High BSL affect blood circulation causing wounds to heal slowly, leading to infections.	Check for redness, breaks, cracks and punctures in skin daily.		
Flu Shot. Once a year.	Ask your Doctor		
Pneumovax. Once every 5 years.	Ask your Doctor		

Appendix C - Carbs-Pro-Fat Ratios

1200 Calorie Diet Ratio			
Calories	1200	Note: It is Recommended that you have <i>less than</i> 2500mg of Sodium and <i>over</i> 25 g of Fiber per day.	
Carbohydrate	55%		
Protein	25%		
Fat	20%		
	Carbohydrate	Protein	Fat
Grams Per Day	165g	75g	26g
Calories Per Day	660 cal	300 cal	240cal

1500 Calorie Diet Ratio			
Calories	1500	Note: It is Recommended that you have <i>less than</i> 2500mg of Sodium and <i>over</i> 25 g of Fiber per day.	
Carbohydrate	55%		
Protein	25%		
Fat	20%		
	Carbohydrate	Protein	Fat
Grams Per Day	206g	93g	33g
Calories Per Day	825 cal	375 cal	300 cal

1800 Calorie Diet Ratio			
Calories	1800	Note: It is Recommended that you have <i>less than</i> 2500mg of Sodium and <i>over</i> 25 g of Fiber per day.	
Carbohydrate	55%		
Protein	25%		
Fat	20%		
	Carbohydrate	Protein	Fat
Grams Per Day	247g	112g	40g
Calories Per Day	990 cal	450 cal	360 cal

2000 Calorie Diet Ratio			
Calories	2000	Note: It is Recommended that you have <i>less than</i> 2500mg of Sodium and <i>over</i> 25 g of Fiber per day.	
Carbohydrate	55%		
Protein	25%		
Fat	20%		
	Carbohydrate	Protein	Fat
Grams Per Day	275g	125g	44g
Calories Per Day	1100 cal	500 cal	400cal

Appendix D – Weight Charts

WEIGHT CHARTS FOR MEN AND WOMEN

WEIGHT CHART FOR MEN				WEIGHT CHART FOR WOMEN			
Height In Feet & Inches	Small Frame	Medium Frame	Large Frame	Height In Feet & Inches	Small Frame	Medium Frame	Large Frame
5'2"	128-134	131-141	138-150	4'10"	102-111	109-121	118-131
5'3"	130-136	133-143	140-153	4'11"	103-113	111-123	120-134
5'4"	132-138	135-145	142-156	5'0"	104-115	113-126	122-137
5'5"	134-140	137-148	144-160	5'1"	106-118	115-129	125-140
5'6"	136-142	139-151	146-164	5'2"	108-121	118-132	128-143
5'7"	138-145	142-154	149-168	5'3"	111-124	121-135	131-147
5'8"	140-148	145-157	152-172	5'4"	114-127	124-138	134-151
5'9"	142-151	148-160	155-176	5'5"	117-130	127-141	137-155
5'10"	144-154	151-163	158-180	5'6"	120-133	130-144	140-159
5'11"	146-157	154-166	161-184	5'7"	123-136	133-147	143-163
6'0"	149-160	157-170	164-188	5'8"	126-139	136-150	146-167
6'1"	152-164	160-174	168-192	5'9"	129-142	139-153	149-170
6'2"	155-168	164-178	172-197	5'10"	132-145	142-156	152-173
6'3"	158-172	167-182	176-202	5'11"	135-148	145-159	155-176
6'4"	162-176	171-187	181-207	6'0"	138-151	148-162	158-179

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