

Diabetes 101

*Managing Type 1 and Type 2 Diabetes
and Getting Fit 4 Life
Through Diet and Exercise*



by Taylore Caldwell



I'm Taylore Caldwell, a healthy diabetic and Certified Diabetes Coach.

I have written this book to give hope to those recently diagnosed with diabetes and the people that care for and love them.

The truth is that small changes in diet and the right amount of exercise can stop the disease in its tracks and get you Fit 4 Life!

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Which Type of Diabetes Do I Have?

The very first thing you must know once you have been diagnosed with diabetes, is what type you have. If you have developed diabetes during pregnancy, you would most likely be diagnosed with gestational diabetes. If this were the case, once you have given birth, your body would return to its non-diabetic state. If not pregnant, you would be either **Type 1** or **Type 2**.

So, you may be asking yourself, “*Why are there different types of diabetes?*” Well, it has a lot to do with the pancreas and how it functions in its production of insulin.

You may also be wondering, “*What is insulin anyway and what does that have to do with me?*” Well, here is where it gets a bit technical, but I will endeavor to keep it simple.

Let’s start with the pancreas. It is a large gland about the size of your own hand. It produces, stores and releases the hormone insulin into your blood stream.

And get this...we all need insulin to survive!

This insulin is produced by the beta cells in the pancreas, and insulin’s job is to regulate the level of blood glucose in your bloodstream. Insulin specifically transports glucose into the billions of cells in your body, giving them the energy to get their specific jobs done.

The functioning of the pancreas sets the stage for determining whether you are Type 1 or Type 2.

So, let’s break it down...

Type 1 is definitely more serious. Let’s take a closer look at *Type 1* and its insulin production. BETA CELLS IN THE PANCREAS ARE NOT PRODUCING ENOUGH INSULIN to regulate the blood glucose in the bloodstream. Without insulin, glucose accumulates in the blood to extremely high toxic levels, causing many cells to starve. NOT GOOD!

So, what is the solution to this dilemma?

As you may have guessed, *Type 1* diabetes must have insulin injections. And as scary as that sounds, this will save your life.



AND, by careful adherence to lowering your blood glucose levels, you can be assured of good health.

Well, now you may be feeling very happy to be a *Type 2* instead of a *Type 1*. The idea of taking daily multiple injections would not be on the top of your fun “to do” list for the day! Am I right?

Well, let’s look at *Type 2*’s. They seem to have it a little easier. First of all, it is not life threatening like *Type 1*. The beta cells in your pancreas are producing insulin. Life is good! Right? Well, even though you are free from the daily shots of insulin, you still have your own list of things you must do in order to be a healthy diabetic.

So, here’s the deal.

With *Type 2* diabetes, you have most likely developed INSULIN RESISTANCE. This is caused in part by family inheritance and /or high levels of fat – specifically triglycerides released from abdominal fat.

A very important fact is that triglycerides DO NOT come from intake of DIETARY FAT, but instead by CARBOHYDRATE CONSUMPTION. Let me repeat.... CARBOHYDRATE CONSUMPTION! Yes! Carbohydrates are the food that has a major effect on blood sugar levels.

Insulin resistance does not happen over night. It’s a slow process taking years or decades to develop. As it develops, a number of physical changes occur. The liver gradually turns more blood sugar (from carbohydrate consumption) into fat, the triglyceride count goes up, and weight gain occurs especially in the waist area.

Let’s think of insulin resistance this way. ..

Insulin is knocking on the door of the muscle and its fat cells. “Knock, knock!”
The cells hear the “knock”, open up, and let glucose in to be used by the cells.

However, with insulin resistance, the muscles don’t hear the “knock” as well – They are resistant to hearing it. This action notifies the pancreas that it needs to make more insulin to be heard, which increases the level of insulin in the blood.

More insulin production...Beta cells working overtime...Glucose building up...
On and on it goes...



Well, as you may already have imagined, this is not good. After some time, the beta cells in the pancreas become tired from the constant production of insulin and begin to burn out.

Sounds a bit depressing, doesn't it? Well...

The REALLY GOOD NEWS is that with *Type 2* diabetes, this can be REVERSED if done soon enough!

I now hear a collective "sigh of relief"!

In conclusion, being diagnosed with either of the types of diabetes, you have the choice to be healthy. No, it is not a hopeless situation. You have the opportunity to be as healthy as the next person. It's a matter of choice.

And as we proceed through the following chapters, you will begin to understand how you can accomplish that.

You CAN take the "bull by the horns" and navigate your own successful path through the "world" of diabetes. You can be Fit 4 Life!



Medical Tests – Knowing Your Risk Profile

The goal of this chapter is to provide you with the knowledge you need to take control of your diabetes and lead a healthy lifestyle. Through knowledge and application, you will be able to avoid the many complications that can arise due to elevated glucose levels.

Working closely with your doctor and performing just a few tests, you will have a baseline analysis and understanding of your diabetes. Such as:

- What is the present health of your pancreas? Have the beta cells been overworked leading to burnout due to high blood sugars?
- Have you already developed some long-term complications of diabetes that can be easily measured?
- Are you at risk for other complications with your diabetes?

This baseline is used to compare with all future tests, as you begin to stabilize your blood glucose levels. Seeing your improvements will give you and your doctor the incentive to maintain and stick with your program or regimen.

HGA1c

HG stands for hemoglobin. It is the pigment of the red blood cells. The average life of a red blood cell is about four months. So the percentage of hemoglobin molecules that contain glucose gives an average of your level of blood sugar over this period.

This provides valuable information for your doctor, to determine the severity, if any, of your diabetes. A truly normal HBA1c has a range of 83 to 90 mg/dl.

Knowing the value of your HGA1c, gives you and your doctor a baseline to determine the most appropriate diet to lower your A1c.



Lipid Profile

This test measures the amount of fatty particles (lipids) in your blood. This provides your doctor with numbers for your Total Cholesterol, LDL (low-density lipoprotein) and HDL (high-density lipoprotein).

Ideally, you have this test after you have fasted for 8 hours. So, as you may have guessed, you may want to have this test first thing in the morning!

Something to know is that most of the cholesterol in our body is made in our liver. It does not come from the foods we ingest. If you eat a meal high in cholesterol, your liver will adjust to make less of the so-called bad cholesterol, LDL.

Eye Examination

Chronically high blood glucose levels can contribute to a number of disorders that can affect your vision, so it is important that you see an ophthalmologist to determine the health of your eyes.

If your eyes are normal, have them examined by an ophthalmologist every couple of years.

If you are not on insurance, the most important test of all would be to have your HGA1c. Of course, you may be already experiencing impairment of vision, or feeling numbness in an extremity, in which case it would be advisable to be tested immediately.

The more proactive you are now in familiarizing yourself with every aspect of diabetes, the less reactive you will have to be later.



Possible Implications of High Blood Sugars

LONG TERM COMPLICATIONS

Persistent high blood sugar levels can weaken the immune system. Your ability to fight infections decreases considerably. As a result, you may become susceptible to infections like influenza and other similar diseases.

Extensive research has shown that high blood glucose levels can lead to some of the following health complications:

Arteriosclerosis

Arteriosclerosis, which is known as hardening of the arteries can eventually occur due to persistent high blood glucose levels. The arteries are blood vessels that supply blood to the heart and the brain as well as other parts of the body.

If your blood is carrying excess sugar, it can be damaging to the arteries. The arteries lose their elasticity and become hard and narrow. The arterial wall also becomes thick due to excess buildup of sugar. This arterial damage leads to eventual heart problems.

Basically, the arteries are unable to provide enough blood to the heart. In order to prevent this damage, blood glucose levels would have to be within near normal levels.

Nerve Damage

Persistently high blood sugar can also lead to damage to the nerves. Complications like peripheral neuropathy have been linked to high blood sugar levels in diabetics.

In peripheral neuropathy, the nerves located in the hands and feet are damaged. Due to resultant nerve damage, the individual experiences a tingling, numbing or burning sensation in their hands and feet.



Kidney Failure

Sustained high blood sugar levels will also cause damage to the kidneys. Diabetes is the leading cause of kidney failure, leading to dialysis. At least 50,000 people in the States every year begin dialysis due to renal failure.

One of the most important tasks of the kidneys is to filter toxins and other impurities from the blood. The kidneys have to work harder to filter the blood when glucose levels are abnormally high. The elevated blood sugars damage the finer blood vessels that nourish the filters within the kidneys. This in turn reduces the kidneys ability to function optimally.

Diabetics with compromised kidneys must do dialysis 2 to 3 times a week, a procedure that is time consuming and uncomfortable. Tubes are inserted in the arm that siphons the blood from the body. The blood then passes through a machine to filter the blood and then pumped back into the body again.

This in itself is a powerful motivator for me to control my glucose levels!

Blindness

High blood sugar can also be detrimental to the eyes. If the blood sugar level is not within the normal range, and if it is left untreated for years, then it can cause eye problems. Uncontrolled or poorly controlled diabetes can damage the retina.

Mild vision problems like dark spots, flashing lights or difficulty focusing can occur. Blurred vision, which is often considered a complication of diabetes, may lead to blindness.

Poor eyesight in diabetes means excess sugar has caused damage to the optic nerve that communicates visual information between the brain and the retina.

Other Symptoms or Complications

Health problems such as erectile dysfunction, pregnancy complications and risk of a stroke are all complications of high blood sugar.

Studies have shown that being lax in the treatment of high blood sugar can have a devastating effect on the production of growth hormones. Failure of the body to produce growth hormones in sufficient amounts may accelerate the aging process of the skin, which means we will look older than we actually are. Personally, I am not ready for that!



As you can see, there are many side effects and complications of high blood glucose levels. In order to avoid these complications, it is imperative to normalize your HGA1c. No one wants to experience blindness, kidney failure or heart disease if there is a choice not to. Would you agree?



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Best Foods to Eat and Not Eat

This may be the most difficult part of the process to accept and implement. In order to live a healthy life as a diabetic, we must change our diet, and there is no time like the present moment.

This may be hard for most people to accept as well as implement. We have lived our whole life eating whatever and whenever we wanted to. We have paid no attention to the amount of sugar or starchy carbohydrates we have eaten. We have eaten foods that came out of a packages and cans, most likely highly processed and devoid of any nutrients.

Many packaged and prepared foods are high in sugar, salt and fat. So, moving toward a diet, which is more natural and more nutrient rich, becomes a challenge for most of us.

Are you up for the challenge? Of course you are! Right?

Don't stress. Learning to eat right is work in progress, and there are plenty of cookbooks and resources to aid you in your transition.

A sensible meal plan for normalizing blood sugars would follow these rules:

- First, you need to avoid foods containing simple sugars. These are the fast acting carbohydrates, such as potatoes, pasta, bread and rice. These foods convert to glucose so fast that they create a dramatic spike in your blood glucose levels. Mannitol and erythritol are two sugar alcohols which will not spike your glucose.
- Second, limit your carbohydrate intake to the amount your injected insulin will be able to handle without causing a significant spike in your glucose levels. Or if you are not taking insulin, take in only what your body can handle without overworking your remaining functioning beta cells. The goal here is to avoid the sugar spikes.
- Third, stop eating when you are no longer hungry. Overeating or stuffing yourself will cause your glucose to rise as well.



Things Not to Eat

- Diet foods and sugar-free foods. These foods may not contain ordinary table sugar, but they will raise your blood sugar. A few sweeteners you may find on labels are fructose, dextrose, lactose, mannitol, sorbitol, and xylose. These will raise your blood sugars, sometimes higher than ordinary sugar.

Also, many sugar free foods are loaded with a rapid acting carbohydrate like flour.

So, yes it may be 'sugar' free, but the other sweeteners and flours will be counterproductive to your goal of lowering your glucose levels.

- Desserts and pastries
- Bread and crackers
- Rice and Pasta
- Breakfast cereals
- Snack foods
- Protein bars
- Fruits and fruit juices
- Starchy and sweet vegetables.

So, you may be wondering what is left? Plenty believe it or not!

Things to Eat

- Most vegetables can be eaten without much change in glucose levels. These would be of the non starchy, or very low starch variety. The list is long and these can be found by searching on the web under "non-starchy" vegetables. A few to mention would be asparagus, peppers, broccoli, brussel sprouts, cabbage, celery and many more.



- Meat, fish, fowl, seafood and eggs. It is the consumption of carbohydrates rather than dietary fat that leads to heart disease and abnormal lipid levels in diabetics.
- Vegetarians and those who want to avoid red meat can use tofu and soybean substitutes. Read the labels for carbohydrate content, as this will figure into your total meal plan. Hemp seeds or hemp hearts are a great source of protein for vegetarians.
- Cheese, butter and cream. These foods contain equal amounts of protein and fat and are relatively low in carbohydrates, other than cottage cheese.
- Soymilk is a good substitute for dairy products. Almond milk and coconut milk would be my first choice. In fact, it is very easy to make your own almond milk.
- Da Vinci gourmet syrups produces over 40 syrups that can be used for various flavors in your cooking or drinks. They use Splenda in their blends, which do not raise blood sugars.
- Nuts are a good source of protein. They do contain carbohydrates and will raise your blood sugar over time, so eat in small amounts. This is hard to do though. Who can stop with 8 nuts in their hand! Forget it!
- Sugar free jello puddings with no maltodextrin as it will raise your blood sugars. If you like jello, start with Knox gelatin and add your own flavorings. It makes for a satisfying dessert.

The above lists are just a sampling to give you an idea of the direction you will want to go in to keep your glucose within range.

This is an exciting time, where you can really learn how to eat right for you!

There are many resources, cookbooks, and chefs who can show you how to eat right for your type of diabetes. You will be introduced to foods you may have never considered before, and this is where you will find your palette expanding in delicious new ways!



Why Exercise is Good for You as a Diabetic

As we go into the specifics of exercise, it is important that you have your exercise program approved by your doctor before beginning. An exercise program that is not put together well could have adverse effects.

It is also important to understand the benefits of exercise for diabetics. Having the knowledge of how exercise will serve you well, is imperative for you maintaining your exercise program. When you feel yourself procrastinating, you simply remember how exercise will help you to be at your optimum level of health.

Physical activity is a fantastic method for lowering blood sugar. While exercising you burn large amounts of glucose and assists the insulin in the way it works. It is called 'insulin sensitization.'+

So, why exercise? Here are some of the benefits for any diabetic...

- It makes you feel good!
- People who aren't diabetic and exercise regularly tend to live longer and have a lower instance of debilitating illnesses.
- It helps to create a positive mental attitude and improved self-image.
- Exercise raises HDL (good cholesterol) and lowers triglycerides.
- Body building (anaerobic exercise) lowers levels of LDL (bad cholesterol).
- Weight bearing or resistance exercise slows the loss of bone mineral.
- Daily strenuous exercise will, over time, increase your insulin sensitivity. This is what all diabetics want!

So, you may wonder **how exercise affects blood sugar?**

Well, in order for lower blood sugar levels to occur during exercise, three conditions must be present.



- The exercise must be prolonged
- Your insulin levels must be adequate
- Your blood sugar must not be too high

Type 1 Things to consider...

With some Type 1's who still produce some insulin, exercise after a meal will be enough to normalize blood sugars without taking a shot.

If you are Type 1 and you have taken just enough long-acting insulin to maintain normal blood sugars for the next 12 hours, and then you go out and run for a couple of miles, your blood sugar will drop too low.

Also, if your blood sugar exceeds 170 mg/dl, it would be best not to exercise until it drops. When you exercise with high blood sugars, they tend to rise even more. So for the Type 1 diabetic, one must be concerned about this, and take more insulin to prevent the blood sugar spike that takes place during exercise.

Type 2 Things to consider...

If you are Type 2, the process of exercise is less complex. You do not have the added task of monitoring your blood sugar levels with insulin like the Type 1.

For the Type 2, prolonged strenuous exercise brings down your insulin resistance because you are increasing your muscle mass. This works to your benefit in enabling you to control your glucose levels and weight loss.

As you increase your ratio of muscle mass to abdominal fat, your insulin resistance will decrease.

So the question becomes, "How do I exercise and keep glucose levels where I want them?"

For a more in depth understanding of maintaining optimal glucose levels while exercising read my ebook "What Diabetics Should Know When Exercising"



So, which is the best type of exercise to perform?

Bodybuilding or resistance exercise is the best exercise for Type 2 diabetics. The building of muscle mass lowers insulin resistance and therefore aids in blood sugar control and weight loss. Another benefit of resistance exercise is that it also helps to increase bone density.

Cardiovascular exercise done anaerobically is very good. In this case, anaerobic exercise would be moving from one muscle group to the next, without resting in between. This helps you to maintain an elevated heart rate. Many gyms have their equipment set up in such a way as to accomplish this easily.

Before starting any exercise program, consult with your physician to be assured that your program matches your level of health and present capability. Then, if possible, hire a coach at the gym to teach you proper form to prevent injuries.

As a Type 1 diabetic, strenuous exercise will not improve your blood sugar control, as it will with Type 2. Although it will allow your muscles to more effectively use the insulin. A walk or any type of exercise will help with better insulin absorption.

The key for the Type 1 diabetic is to determine the level of intensity of exercise you are about to engage in, the length of time of your exercise, how much insulin you have taken before your exercise, and how to maintain a steady glucose level through the whole experience.

You must also consider how to prepare for avoiding hypoglycemic events, whether it is decreasing your basal in the morning before exercise, and/or carefully calculating your bolus for any meals after an exercise event.

There is much to consider for a Type 1 and their exercise program.

Remember...as diabetics we all need to increase our activity. Simply walking is a very good and effective exercise for all diabetics. Most important is talking with your doctor to understand your abilities and limitations. Then set up your exercise program based on that information.

And go easy on yourself. If exercise is new to you, find something within your abilities, begin slowly, and add a friend and a great location that is pleasurable to you. And remember, have fun while doing it!



How Can a Diabetes Coach Help You?

As a person with diabetes, you have no doubt gotten a lot of advice on how to control your condition and even tried conventional treatment programs that haven't worked for you as you hoped. That isn't surprising.

Leading physicians agree that the majority of treatment programs are not only misguided, but also outdated. Their focus has been on masking over your symptoms instead of dealing with the root causes of your problems head on.

They do not provide the practical tools, support and encouragement that can empower you to experience long term health and success.

Coaching benefits you by combining education, counseling and support to teach you HOW to balance you body for health and well being, empowering you to take action. Coaching can also improve the lives of caretakers of diabetics, whether they are a parent, spouse, or adult taking care of a parent.

If you need help designing your new life around diabetes, whether as the diabetic patient or the diabetic caretaker, then a coach might be just what you have been looking for.

With a coach you will have a guide who anticipates the obstacles on the path to better health, and a navigator to help you steer around them. You will have a partner to remind you of your greatness when you get stuck, to give you the tools to get unstuck, to challenge you to take action in spite of your fears, and someone who is ready and anxious to celebrate your successes every step of the way!

As your diabetes coach, I will work closely with you to map out a game plan for achieving the results you want. I will stay with you throughout the process to guide you, create actionable plans, break down what holds you back and motivate you to move forward. I will inspire, enthuse and challenge you to attain your goals. You will come to understand what drives you, what motivates you.

Through your own power, you will succeed!

If you would like to find out exactly how my coaching programs would address your specific needs, whether diabetic or caretaker, simply visit my site and click on "What WE will Do!", and I will send you a personal plan of action. There are no obligations, but there is a big benefit!

