

How to Prevent Diabetes

A Guide for Those with Prediabetes

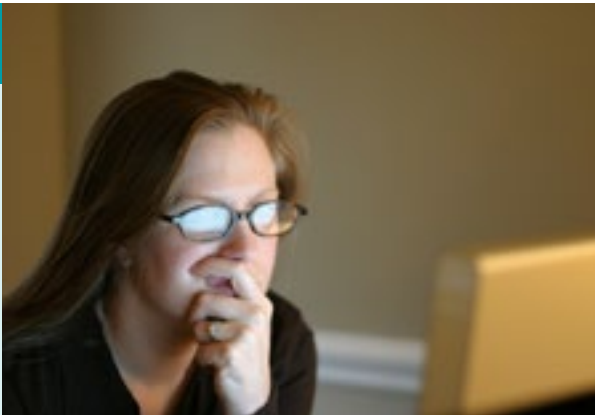


Brought to you by:



DiabetesAmerica.com

Your doctor said you have **prediabetes.**



What is that?

Is it curable?

What can I do?

You may have had a flood of emotions in the moments after being told you have prediabetes and in the days that follow including anger, fear, helplessness and confusion – among others.

Then you start to think of a list of questions, but by that time you've left your doctor's office!

- **What does it mean to have prediabetes?**
- **Can I reverse it? How?**
- **Is it certain that I will get diabetes?**
- **What can I do to stop diabetes from developing?**
- **How long does it take to make a change that can help me avoid diabetes?**
- **How does this affect my children? Is it hereditary?**



The Good News:



Prediabetes is not the same as a diabetes diagnosis. Diabetes is a lifelong condition, controllable but rarely cured. Over time people with prediabetes develop diabetes at a high rate. However, there are steps you can take to prevent it.

Congratulations on taking the first step to living longer and improving your quality of life!

Educating yourself and your family will help you prepare for the necessary steps that can prevent diabetes and other serious conditions from developing.

In the U.S., about 1 in every 3 adults has prediabetes. That's about 86 million people!

Of those 86 million only about 10% know they have it.

Without a specific therapy, about 1/3 of those with prediabetes will develop Type 2 diabetes over the next four years.

RISK FACTORS:

- **Obesity**
- **Family History**
- **Having Diabetes While Pregnant (gestational diabetes)**

What is Prediabetes ?

If you have prediabetes your blood sugar level is higher than normal, but not high enough for a diagnosis of diabetes.

Simply eating a lot of sugar and carbohydrates doesn't mean your blood sugar will be high. What matters is how your body handles the sugars that are introduced in the foods you eat.

To control blood sugar, your body creates the hormone insulin. Someone with prediabetes is insulin resistant. This means that the body does not use the insulin it creates correctly, allowing blood sugar to get too high.

Not only does insulin resistance put you at a higher risk for developing Type 2 diabetes, it also increases risk for heart disease and stroke! You might also find that you are

more susceptible to sickness like colds and the flu. This can be caused in part by a sugar imbalance which affects your body's immune system.

Unfortunately between 15 and 30% of those with prediabetes will develop Type 2 diabetes within 5 years.

For most people,
you **CAN STOP THE CYCLE** and prevent diabetes.

By making changes in how you eat and your level of activity, your body may be able to start using its insulin correctly again.



Test Results You Should Know

Several tests are available that tell your doctor if your blood sugar is in the normal range. Knowing your results can literally save your life!

A1C

The A1C test measures your average blood glucose (sugar) for the past 2 to 3 months. No fasting is need for this test.

Result	A1C
Normal	less than 5.7%
Prediabetes	5.7% to 6.4%
Diabetes	6.5% or higher

Fasting Plasma Glucose (FPG)

This test checks your fasting blood glucose (sugar) levels. Fasting means not having anything to eat or drink (except water) for at least 8 hours before the test. This test is usually done first thing in the morning, before breakfast.

Result	Fasting Plasma Glucose (FPG)
Normal	less than 100 mg/dl
Prediabetes	100 mg/dl to 125 mg/dl
Diabetes	126 mg/dl or higher

Oral Glucose Tolerance Test (also called the OGTT)

The OGTT is a two-hour test that checks your blood glucose levels before and 2 hours after you drink a special sweet drink. It tells the doctor how your body processes glucose.

Result	Oral Glucose Tolerance Test (OGTT)
Normal	less than 140 mg/dl
Prediabetes	140 mg/dl to 199 mg/dl
Diabetes	200 mg/dl or higher

Now...What Can You Do to Avoid Diabetes?

Once you have the test results and have been told that you have prediabetes, what can you do to stop it from developing into Type 2 diabetes?

The very first step is to get in the right mindset.

You CAN turn this around. You have the power within your control to make choices that will reduce your chances of developing diabetes and several other serious diseases by making different lifestyle choices.

There are two primary areas to focus on in your new lifestyle choices:
NUTRITION MANAGEMENT & EXERCISE



Being overweight is the number one cause of prediabetes. Working on both your food intake and your exercise routine is most likely going to help you lose weight and develop a lifestyle that encourages you to keep the weight off.

One of the first things you'll want to do is find out if you're considered overweight



using the Body Mass Index calculation. You can use an online calculator or you can use the formula shown on the next page.

If you are overweight or obese, you should aim to lose between 5% and 10% of your current body weight. This will not only help you to feel better and allow you to move easier, you're also likely to improve the blood sugar counts. This will usually allow insulin to start working better in your body again, as well as reduce cholesterol and blood pressure which can help you avoid heart disease and stroke.

How to Know Your Target Weight

Your Body Mass Index, or BMI, will give you a general idea of how much weight you need to lose.

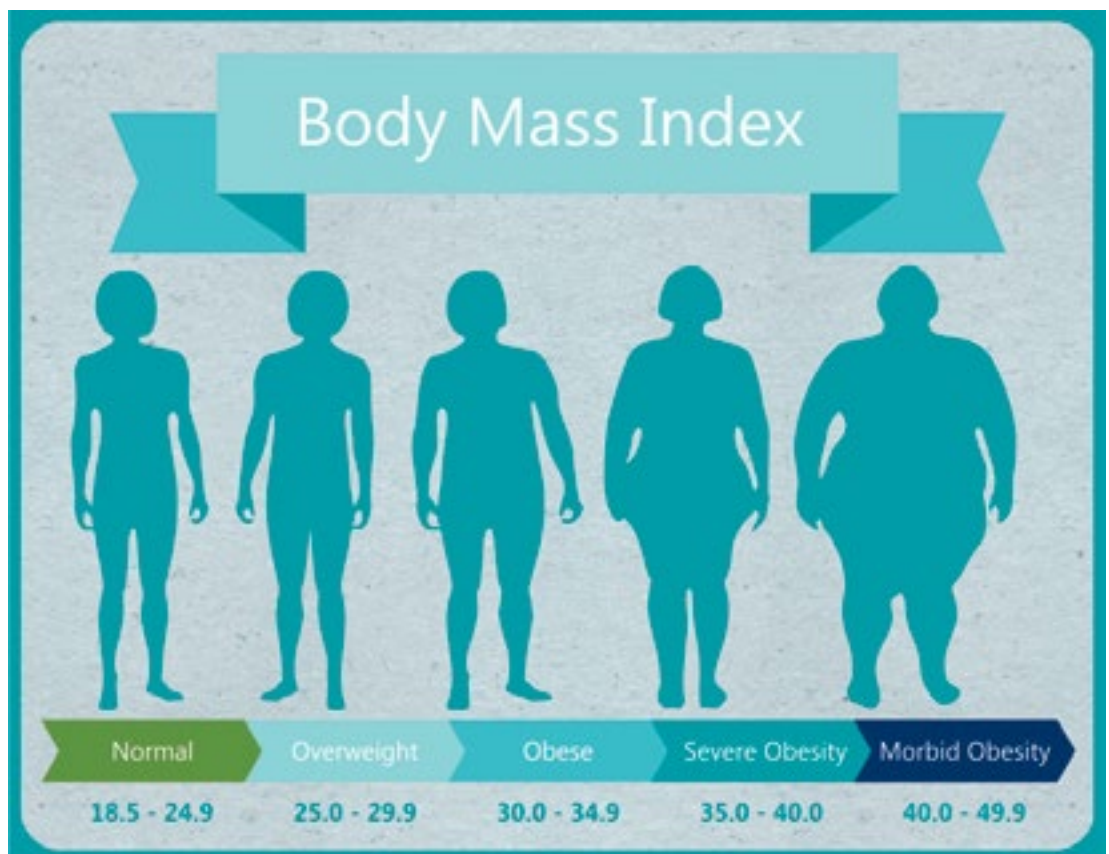
To find your BMI, check out the online calculator at mydietiq.com or use this formula:

1. Multiply your weight in pounds by 703.
2. Multiply your height in inches by itself.
3. Divide the number in step 1 by the number in step 2.

Use the number you calculate and compare it to the table below. If you are in the overweight or any of the obese categories, you should consider a new eating and exercise plan immediately.

For example a person weighing 200 pounds and 5 feet, 5 inches tall would calculate the following:

- 1) 200 pounds x 703 = 140,600
- 2) 5 ft. 5 in. equals 65 inches tall x 65 = 4,225
- 3) 140,600 divided by 4,225 = 33.3 BMI



Nutrition Management Planning

Quality and Quantity

Did you notice the word “plan”? That’s important because there’s more to losing weight than simply “eating less”. It’s true that you need to use more calories than you take in on a daily basis (*quantity*). But you want to be sure that the calories you take in are going to fuel your body, make you stronger and help you to feel good (*quality*). Your daily nutrition affects your body both immediately with short term feelings of energy and wellness as well as in the long run with the development of various diseases or conditions due in part to nutrition decisions made over the course of months or years.

HOW MANY **CALORIES** DO YOU NEED?

Your calorie needs are dependent on the amount of physical activity you have in a day. If you exercise you’ll need more calories than if you don’t exercise at all. If you sit all day at work, you’ll need less calories than someone who walks around or gets up and down constantly.

There are few ways commonly used to determine how many calories you need to maintain your current weight and how many calories you’ll need to reduce each day in order to lose weight.

CALORIE CALCULATOR

The most common way to find your calorie needs is to use a formula. The Mayo Clinic offers an easy-to-use calculator that will tell you how many calories you’ll need to consume each day to maintain your current weight. This is also called “maintenance calories”.

Search online for the Mayo Clinic Calorie Calculator. This will ask for a few key pieces of information in order to give you a general guideline for the number of calories you need each day.

METABOLIC TESTING

Your metabolism is the rate at which your body converts food and drink into energy. This varies for everyone based on their gender, age and amount of muscle mass.

The most accurate way to determine your calorie needs is to take a metabolic test called indirect calorimetry. These simple and inexpensive breathing tests are offered by some physicians and dietitians. This test will provide more precise values of how many calories your body needs at rest, at work and for exercise.

To lose weight gradually, it is generally recommended that you reduce your “maintenance calories” by 500-1000 calories each day.

How and What to Eat

Weight loss is not a quick fix or a short term activity. To keep the weight off and manage your blood sugar to prevent Type 2 diabetes, it's important to equip yourself with skills that make long-lasting weight loss possible. You'll need to know:

- How to cook foods that are delicious and healthy.
- How to enjoy dining out and socializing without sabotaging your success.
- What to take for lunch that is quick and convenient.
- What kinds of snacks are OK?
- When should you eat throughout the day?



Whenever possible we recommend you meet with a dietitian, or certified diabetes educator before starting on a weight loss plan. Reading information online, although a great start, can be overwhelming, confusing, and sometimes even dangerous. Working together with a nutrition professional, you'll develop a healthy eating plan targeted to meet your personal goals and medical needs.

By working with a diabetes educator, registered dietitian or nutritionist, you can get answers to the questions you have and you'll be given helpful information about how to stay on track with your new lifestyle choice of healthier eating. They'll also know how challenging it can be at times to stay motivated. They can be your coach and motivator and can connect you with people who are going through the same experiences you are. Finding a friend who is going through weight loss or has recently accomplished their weight loss goals can be helpful and encouraging. It can even inspire some friendly competition!

Remember... you're not alone!

Types of Diet Plans

There are two types of diet plans often recommended depending on the amount of weight loss that is needed: Very Low Calorie and Low Calorie plans. When choosing these, you should be sure that you include medical monitoring. This ensures you'll get maximum results and stay safe while you lose weight.

VLCD Very Low Calorie Diet Plan

Is a VLCD safe?

This is designed for those who have at least 25 pounds to lose. VLCD's typically include 800 calories per day using foods that are high in protein, low in carbohydrates and moderately low in fat. Meal replacement products, such as shakes and bars, are often used in place of conventional meals for ease and convenience, while ensuring adequate nutrition.

With a proper pre-program screening exam and ongoing medical monitoring, this approach is safe and effective. As you progress through the program and lose weight, it's important to have regular blood pressure checks and blood level checks, to be sure that any medications you may be taking are in the right balance.

How does a VLCD work?

On a very low calorie diet (VLCD) you can expect to lose weight quickly, an average of 3-5 pounds per week. This type of diet approach can be especially useful for those who have had trouble staying on a plan long enough to find success or those who may have a medical reason to lose the weight quickly. Those who have recently been diagnosed with prediabetes are often good candidates for this diet approach as blood sugar levels can drop dramatically in a very short period of time, thus avoiding or reducing medication.

Within 3 to 4 days of starting the VLCD, the body goes into a state of ketosis. Ketosis occurs when the body needs energy and there is not enough glucose available from the food you've eaten. The body will then begin to break down stored fat and use it as energy. This process builds up ketones in the body which are used as fuel. Any extra ketones are eliminated in the urine. Once in the state of ketosis, patients report not feeling very hungry and are energetic. This is because the body adapts well to ketosis and you have the necessary fuel and nutrition to stay active.

Once goal weight is achieved, a slow transition to a healthy eating plan is essential. You will want to select a maintenance plan that includes expert nutritional advice and ongoing support so that you don't find yourself regaining the weight you lost. It's recommended that you continue on a maintenance program for at least as long as you were in the dieting phase.

Types of Diet Plans (cont.)

LCD Low Calorie Diet Plan

A low calorie diet is typically 1,000 or more calories per day and results in a weight loss of 1-3 pounds per week. This is a good option for those whose doctor feels they should not go into a state of ketosis or for those who don't have as much to lose in order to reach a healthy weight. While weight loss is generally slower, a low calorie diet plan allows for more normalized eating while you lose weight gradually.

Although not essential, a diet program that offers medical supervision and education is ideal to ensure optimum health and well-being while your body adapts to a new eating style and/or medication changes.

Even though you don't need a referral from your physician, for a low calorie diet, it's always a good idea to discuss your weight loss plans with your doctor. Finding a doctor or weight loss plan that specializes in diabetes patients is ideal. They can assist in monitoring your health during your weight loss journey.



What Makes a Healthy Diet?

Food Selection

If you're not using a specific diet plan, you can still eat in a healthy way that will help you feel better and even look better!

Avoid foods that are high in:

- **calories**
- **sugar**
- **fat**
- **salt**

Before you go to the grocery store, consider what you're going to eat for the next few days. Try to include foods that are as close to natural as possible, such as:

- **fresh vegetables**
- **whole grains**
- **fresh fruits**
- **non-fat or low-fat dairy products**
- **beans**
- **lean meats**
- **poultry**
- **fish**

Try to avoid pre-packaged foods that have hidden sugar and are often high in sodium. You should also avoid high-fat dairy products, fatty meats, rich sauces, breads and rolls — especially if they aren't whole grain — and desserts.

Another food to be cautious of is salad dressing! It can be high in sugar and fat, ruining the nutritional benefit of the great salad you're eating! Always ask for salad dressing on the side and only lightly dip your fork into the dressing before putting food on the fork.

If you're not quite sure what to food to fix or need some new ideas, websites can offer healthy, low calorie recipes and menu ideas. A good rule of thumb if you're counting calories, is to stay close to 300 calories each for breakfast and lunch and 500 calories for dinner. A healthy snack can be around 150 calories.

Avoid sweetened drinks, even those with artificial sweetener. Your body will treat it much the same as regular sugar, giving you cravings for more.

Portion Size

Americans have become accustomed to super size portions and this fact, coupled with the fact that most of us aren't very physically active, has contributed to the obesity epidemic. Your plate should consist of approximately:

1/4 protein

1/4 whole grains

1/2 vegetables — green is ideal, but you can mix it up with yellow, red, and orange veggies too!



Fruit makes a nice dessert. Limit cookies, candies or other desserts in your diet because of the amount of fat, calories and sugar they contain.

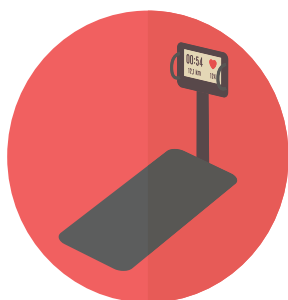
Exercise

Once you have a nutrition plan in place, it's time to start working on increasing your physical activity. Exercise can give a big boost to your weight loss efforts, increase your energy level, help you sleep better and generally make you feel better. The recommended type and amount of exercise will vary based on your weight, physical and medical condition, and the approach you're following to lose weight.



WEEK 1

Start slow at first and build up. This is especially important if you haven't been active in awhile. It's always a good idea to discuss your exercise plans with your doctor before you launch into a full routine. But getting up and out and walking more is a safe and easy start for most folks. If you're on a VLCD plan, be cautious this first week as your body adjust to the changes from the diet.



WEEK 2

Create an exercise routine to include cardio exercises at least 3 times this week. Cardio exercises will help speed up your breathing and get your heart rate up. It's also the best exercise to burn calories. For cardio benefit you can bike, jog, run, walk, even a good workout video.



WEEK 3

You're well on your way to losing weight so now it's time to get focused on exercise. Set your goal to meet the recommendation set by the American College of Sports Medicine (ACSM) – 150 minutes of exercise each week. That's about 30 minutes, 5 days per week or 20 minutes each day.

A healthy exercise routine also includes strengthening exercises or resistance training. These exercises build bone strength in addition to muscle tone. Check out a class at your local gym or watch a good U-tube video of upper and lower body strengthening exercises. This type of exercise is not recommended while you're on a VLCD reducing diet.

You'll find the more exercise you do, the easier it will become. It takes a while for anything new to become a habit so don't get discouraged. Find an exercise buddy. Do fun activities with your kids or grandkids. Dance in your living room. Really, it doesn't matter what you do; just keep moving! It may be uncomfortable in the beginning, but the benefits you receive can last a lifetime.

Is There Medicine for Prediabetes?

There is an FDA approved medicine called *Metformin* that is sometimes prescribed to patients with prediabetes that helps control blood sugar. But unfortunately it does not help you make the lifestyle changes that would allow your body to better tolerate its own glucose production. Medicine is also an added monthly expense that can often be avoided by losing weight and making better nutrition and exercise choices.

*Medicine is
an added
monthly
expense that
can often be
avoided by
losing weight
and making
better nutrition
and exercise
choices.*

Metformin vs. Lifestyle Change

A long-term clinical study called the Diabetes Prevention Program was conducted in 27 states with more than 3,000 people diagnosed with prediabetes, over the course of approximately 3 years. **The study compared two groups:**

Those with prediabetes who took Metformin twice a day (850 mg per dose)

Those with prediabetes who used nutrition and exercise to lose weight and change their lifestyle.



AVERAGE AGE: 51 YEARS • BMI: 34 • 68% WOMEN 32% MEN

Among those who participated in the study:

7.8% who used Metformin developed diabetes

4.8% who used lifestyle modification developed diabetes

What worked?

Intensive lifestyle intervention reduced the development of diabetes by 58%

Metformin reduced the development of diabetes by 31%

**GOAL: LOSE 7% of body weight
EXERCISE 150 minutes per week**

At the end of 24 weeks, 76% of those on the lifestyle modification plan had achieved the goal of 150 minutes or more of physical activity per week.

Lifestyle change was more effective than metformin.

Why Lifestyle Change has a Greater Impact on Reducing Diabetes Risk

Those in the study group that focused on lifestyle change were given more than a prescription for fewer calories and exercise. They were educated on *how* to make the changes and keep the changes in effect over the long-term. The educational portion of the lifestyle change included information on:

- Self monitoring techniques
- Problem solving for difficult situations
- Individualizing programs
- Self esteem, empowerment, and social support
- Frequent contact with case manager and DPP support staff

THE BOTTOM LINE:

Changing your lifestyle produces better results than using a medicine to control blood sugar. And those results can be long-term. But lifestyle change is more than just eating less and exercising more. Doing only those two things will last for awhile but learning new skills, understanding why you're making changes (what's your motivation?) and being aware of how your body reacts, is the winning recipe for your continued success. Whether at home or at work, in stressful situations or social situations, you'll have the skills needed for continued health and success.



Getting Help

Gaining support from others is important for most people. This can be done in a variety of ways and we recommend that you include at least two of the following:

Group support - Sharing knowledge and experiences with others going through a similar situation can be encouraging and provide you with practical advice.

Family & friend support - Choose people in your inner circle who know you well and are positive influences for you. Communicate with them openly and tell them how they can support you on your journey.

Social media - This can be useful for staying accountable. Your followers/friends will want to know your progress once you've made a statement about your goals. Knowing that others will expect a status update can keep you on track.

Professional guidance - Whether this is from a dietitian, a diabetes educator or a physician, knowing more about the science behind diabetes and how your diet and exercise will affect the likelihood you'll develop diabetes can be very beneficial. They are a great source of good information.



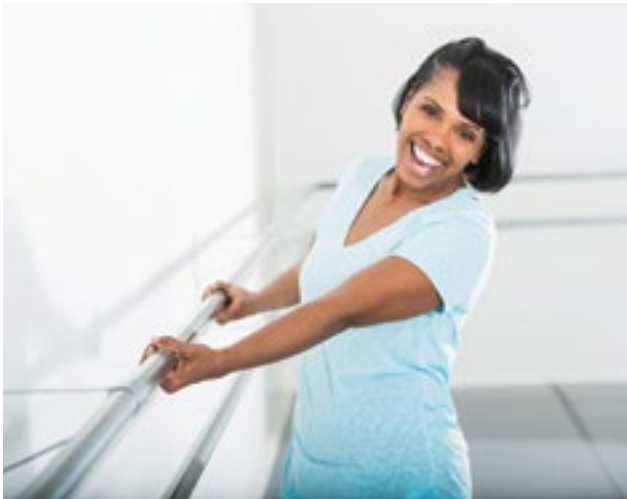
What To Do Now?

If you're convinced, like we are, that achieving a healthy weight, eating well and exercising regularly can reduce your chance of developing Type 2 diabetes, then it's time to take action. The step you take today can have an impact on the years to come and the quality of those years.

There are many diet plans or approaches available. We recommend you choose one that includes:

- Meal replacements for the initial weight loss phase.
- Medical support and monitoring of your progress and medication as you lose weight.
- Education about diabetes, eating habits, exercise and other healthy lifestyle choices.

If you're interested in learning more about our programs, we recommend a free personal consultation with one of our dieticians.



**Ready to find out how
you can start your new
lifestyle?**

Visit diabetesamerica.com

- Click *Request an Appointment* to get started

About the Authors



Paul Lyde, MD, CDE

Dr. Lyde is a Board Certified Internal Medicine physician with Diabetes America. He has practiced in the North Texas area since 1991. The treatment of patients with diabetes and prevention of complications has long been an interest for Dr. Lyde since it was a condition he often encountered in his patients when he worked as a primary care physician.

With great advancements in the understanding of diabetes, he and his staff at Diabetes America are able to guide patients towards goals that are likely to prevent the development of diabetes, complications and side effects of diabetes and an improved quality of life. Working with a team which includes diabetes educators makes achieving these goals a reality for patients. Dr. Lyde enjoys the meaning in his life that comes from guiding a person through difficult terrain to safe ground, especially when they just didn't think it could be done.



Madeleine Hayek, MS, RD, CDE

Madeleine holds a graduate degree in nutrition from Texas Woman's University, and is a Registered Dietitian. While working as the lead dietitian in several hospitals, she felt a special passion for diabetes, realizing that nutrition can make a significant and positive impact in the care of this disease. After obtaining a diabetes certification, she joined Diabetes America in 2012 as a Diabetes Educator. Since then her depth of knowledge on diabetes has grown along with the advancement of diabetes treatments.

Madeleine is now the DietIQ coordinator at two Diabetes America centers in the Houston area. Holding a level I and level 2 certificate in weight management, combined with her personal experience helping patients, she is a great resource for those seeking a safe, medically supervised weight loss program.



Sue Thompson, MS, RD

Sue has spent most of her career specializing in weight management, disease prevention and behavior change. A registered dietitian by training, she has developed numerous programs and services that have helped thousands of patients successfully lose weight and improve their overall health. Sue is passionate about the impact that diet and nutrition has on health and wellbeing. "Our job as professionals is to provide sound information and personal guidance that empowers our patients to make healthy decisions to fit their life. Making smart decisions and doing your best each day, makes all the difference in managing many diseases and living a healthy life."

References

National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)
Centers for Disease Control and Prevention
YMCA's Diabetes Prevention Program
Diabetes Prevention Program Outcomes Study
American Diabetes Association

©2015 – DiabetesAmerica, Inc. All Rights Reserved.