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Chapter 1
What It Means to Flourish with Diabetes

Diabetes is one of the most common long-term medical conditions of today's generation, with rates rising dramatically across the globe year on year. Diabetes occurs when problems arise with how blood glucose is regulated; so there's no getting away from the fact that what you eat, combined with modern medicinal therapy is fundamental to its prevention, reversal, avoidance of complications, and optimum long-term management. Of course, that's good news because a greater understanding of how to improve your lifestyle can empower you to take control and help you to live your best life. The even better news is that this journey can be enjoyable, fun, sociable, inspiring, and tasty.

This chapter serves as your entry world into what you need to know about diabetes. Here we discuss the basics about the different types of diabetes and the complications that can arise if blood glucose control is poor. You discover the types of lifestyle changes you can make to make a tangible and measurable difference.

Recognizing Diabetes

With so much diabetes around these days, you may think that recognizing it should be easy. The truth is that it's not easy, because diabetes is defined by blood tests. You can't just look at someone and know the level of glucose — blood sugar — in their blood.

Blood glucose rises and falls depending on what a person is doing — varying with eating, fasting, or exercising. If control of blood glucose levels is compromised and levels rise beyond certain thresholds with risks of complications, then diabetes is diagnosed.

Here we examine what diabetes is, classify the different types of diabetes, discuss the consequences of diabetes, and mention how you can manage it.

Defining diabetes

In 2023 the U.S. Centers for Disease Control and Prevention reported that about 38 million people in the United States have established diabetes and one in five of them don't know they have it.

The level of glucose that means you have diabetes is as follows:

- A *casual* blood glucose of 200 milligrams per deciliter (mg/dl) or more at any time of day or night, along with symptoms such as fatigue, frequent urination and thirst, slow healing of skin, urinary infections, and vaginal itching in women. A normal casual blood glucose should be between 70 and 139 mg/dl.
- A *fasting* blood glucose of 126 mg/dl or more after no food for at least eight hours. A normal fasting blood glucose should be less than 100 mg/dl.
- A blood glucose of 200 mg/dl or greater two hours after consuming 75 grams of glucose.



REMEMBER

A diagnosis of diabetes requires at least two abnormal levels on two different occasions. Don't accept a lifelong diagnosis of diabetes on the basis of a single test.

A fasting blood glucose between 100 and 125 mg/dl or casual blood glucose between 140 and 199 mg/dl is prediabetes. Most people with prediabetes will develop diabetes within ten years unless they make significant lifestyle changes. Although people with prediabetes don't usually develop small blood vessel complications of diabetes like blindness, kidney failure, and nerve damage, they're more prone to large vessel disease like heart attacks and strokes, so you want to get that level of

glucose down. In 2019 an estimated 98 million people — that's more than one in three people — in the United States have prediabetes.

The American Diabetes Association has added a new criteria for the definition of diabetes, based around a person's A1C number. *A1C* is a measure of the average blood glucose for the last 60 to 90 days. If the A1C is equal to or greater than 6.5 percent, the person is considered to have diabetes.



REMEMBER

Many countries use different measurements for blood glucose — millimole per liter (mmol/l). The equivalent cut off values for a diagnosis of diabetes are 7.0 mmol/l for a fasting glucose and 11.1 mmol/l for a casual measurement (sometimes called a random blood glucose). The equivalent in mmol/mol for an A1C of 6.5 percent is 48.

Categorizing diabetes

The following list describes the three main types of diabetes:

- **Type 1 diabetes:** This used to be called *juvenile diabetes* or *insulin-dependent diabetes.* It mostly begins in childhood and results from the body's self-destruction of its own pancreas. The *pancreas* is an organ of the body that sits behind the stomach and makes *insulin,* the chemical or hormone that gets glucose into cells where it can be used. You can't live without insulin, so people with type 1 diabetes must take insulin shots. Type 1 diabetes represents about 10 percent of total diabetes numbers.
- **Type 2 diabetes:** Once called *adult-onset diabetes,* type 2 used to begin around the age of 40, but it's occurring more often in children, many of whom are getting heavier and heavier and exercising less and less. The problem in type 2 diabetes isn't a total lack of insulin, as occurs in type 1, but a resistance to the insulin, so that the glucose still doesn't get into cells but remains in the blood. It's often associated with being overweight and having a family history of diabetes.
- **Gestational diabetes:** This type of diabetes is like type 2 diabetes but occurs in women during pregnancy, when a lot of chemicals in the mother's blood oppose the action of insulin. About 4 percent of all pregnancies are complicated by gestational diabetes. If the mother isn't treated to lower the blood glucose, the glucose gets into the baby's bloodstream. The baby produces plenty of insulin and begins to store the excess glucose as fat in all the wrong places. If this happens, the baby may be larger than usual and therefore may be hard to deliver.

  When the baby is born, they're cut off from the large sugar supply but are still making lots of insulin, so their blood glucose can drop severely after birth.

The mother is at risk of gestational diabetes in later pregnancies and of type 2 diabetes as she gets older. About 50 percent of women with gestational diabetes develop diabetes at some stage, so regular testing and adopting a healthy lifestyle are both really important after a diagnosis of gestational diabetes. Women should be screened for gestational diabetes at 24 to 28 weeks of the pregnancy.

- **Other types:** A small group of people with diabetes suffer from one of these much less common varieties of diabetes:
  - Latent autoimmune diabetes in adults (LADA), which has characteristics of both type 1 and type 2 diabetes
  - Genetic defects of the beta cell, which makes insulin
  - Medications that affect insulin action like cortisol or prednisone
  - Diseases or conditions that damage the pancreas like pancreatitis or cystic fibrosis
  - Genetic defects in insulin action

Knowing the consequences of diabetes

If your blood glucose isn't controlled — that is, kept between 70 and 139 mg/dl after eating or under 100 mg/dl fasting — damage can occur to your body. The damage can be divided into three categories: irritations, short-term complications, and long-term complications.

Irritations

Irritations are mild and reversible but still unpleasant results of high blood glucose levels. The levels aren't so high that the person is in immediate life-threatening danger. The most important of these irritations are the following:

- Blurred vision
- Fatigue
- Frequent urination and thirst
- Genital itching, especially in females
- Gum and urinary tract infections
- Obesity
- Slow healing of the skin

Short-term complications

These complications can be very serious and lead to death if not treated. They're associated with very high levels of blood glucose — in the 400s and above. The three main short-term complications are the following:

- **Ketoacidosis:** This complication is found mostly in type 1 diabetes. *Ketoacidosis* is a severe acid condition of the blood that results from lack of insulin. The patient becomes very sick and will die if not treated with large volumes of fluids and large amounts of insulin. After the situation is reversed, however, the patient is fine.
- **Hyperosmolar syndrome:** This condition is often seen in neglected older people. Their blood glucose rises due to severe dehydration and the fact that the kidneys of the older population can't get rid of glucose the way younger kidneys can. The blood becomes like thick syrup. The person can die if large amounts of fluids aren't restored. They don't need that much insulin to recover. After the condition is reversed, these people can return to a normal state.
- **Hypoglycemia or low blood glucose:** This complication happens when the patient is on a drug like insulin or a pill that drives the glucose down but isn't getting enough food or is getting too much exercise. After it falls below 70 mg/dl, the patient begins to feel bad. Typical symptoms include sweating, rapid heartbeat, hunger, nervousness, confusion, and coma if the low glucose is prolonged. Glucose by mouth, or by venous injection if the person is unconscious, is the usual treatment. This complication usually causes no permanent damage.

Long-term complications

These problems occur after ten or more years of poorly controlled diabetes or, in the case of the macrovascular complications, after years of prediabetes or diabetes. They can have a substantial impact on quality of life. See the latest edition of our book *Diabetes For Dummies* (John Wiley & Sons, Inc.) for more information on screening for these complications, their prevention, and treatment.

The long-term complications are divided into two groups: *microvascular*, which are due at least in part to small blood vessel damage, and *macrovascular*, associated with damage to large blood vessels.

There is a lot of good news with respect to these complications. Changes to diet and lifestyle, including enjoying the way of life and recipes in Part 2, along with excellent medical treatments to reverse or optimize prediabetes or diabetes can significantly reduce the risk of micro- and macrovascular complications.

MICROVASCULAR COMPLICATIONS

Microvascular complications include the following:

- **Diabetic retinopathy:** Eye damage that leads to blindness if untreated.
- **Diabetic nephropathy:** Kidney damage that can lead to kidney failure.
- **Diabetic neuropathy:** Nerve damage that results in many clinical symptoms, the most common of which are tingling and numbness in the feet. Lack of sensation in the feet can result in severe injury without awareness unless you carefully look at your feet regularly. Such injury can result in infection and even amputation.

MACROVASCULAR COMPLICATIONS

Macrovascular complications also occur in prediabetes and consist of the following:

- **Arteriosclerotic heart disease:** Blockage of the blood vessels of the heart. This is the most common cause of death in diabetes due to a heart attack.
- **Arteriosclerotic cerebrovascular disease:** Blockage of blood vessels to the brain, resulting in a stroke and a common form of dementia.
- **Arteriosclerotic peripheral vascular disease involving the blood vessels of the legs:** These vessels can become clogged and result in amputation of the feet or legs.

Recognizing how you can manage diabetes

Treatment of diabetes involves three essential elements:

- **Diet:** If you follow the recommendations in this book, you can lower your average blood glucose by as much as 30 to 50 mg/dl. Doing so can reduce the complication rate by as much as 33 percent. You can also lower your A1C, prevent or reverse prediabetes, or put type 2 diabetes into remission.
- **Exercise:** Physical activity is crucial to keeping glucose levels in check. We touch on exercise in Chapter 3 and we cover it more extensively in the latest edition of *Diabetes For Dummies* (John Wiley & Sons, Inc.).
- **Medication:** Diabetes medications abound — there are far too many to discuss here, but you can find out about them in *Diabetes For Dummies*.

Understanding Diabetes, Weight, and Chronic Illnesses

You're most likely to flourish when you're feeling fit and well — experiencing good health and free of the burden of chronic diseases. If you do encounter a long-term illness, you can aim, with the support of medical and lifestyle measures, to reduce the symptoms, manage, or even reverse the condition.

Unfortunately, the last 50 years have seen a dramatic rise in the number of people who are living with one or more long-term illness such as diabetes, heart disease, stroke, dementia, kidney disease, and cancer. The World Health Organization (WHO) describes these as *noncommunicable diseases or NCDs.* Prior to good public health measures and antibiotics, infections were the greatest threat to human health, but now NCDs are rising at an alarming rate across the globe, with increased risk of disability or early death.



REMEMBER

This trend can be reversed if people understand and change the modifiable factors — those things that people have some control. Remember the following:

- The dramatic rise in NCDs has occurred with global changes in people's behavior toward a more sedentary lifestyle with increased food portion sizes and greater consumption of high-calorie, high-fat, highly refined, and processed foods with added artificial ingredients including sugars, salt, and preservatives.
- People who are overweight or obese are at an increased risk of developing type 2 diabetes.
- NCDs such as heart disease, stroke, many cancers, and dementia are increased in people who have type 2 diabetes.
- NCDs such as heart disease, stroke, many cancers, and dementia are increased in people who have a poor diet and lifestyle, even if they aren't overweight or obese, and whether they have diabetes or not.

This may seem daunting, but in Part 1 we focus on the flip side where the news is much brighter:

- Most NCDs are preventable or reversible through lifestyle measures such as not smoking, getting regular exercise, improving sleep quality, reducing stress, and having a healthy diet.
- An improved diet and lifestyle can prevent or reverse unhealthy weight gain and obesity.

- An improved diet and lifestyle can prevent or reverse type 2 diabetes.
- An improved diet and lifestyle can be key in the better management of type 2 diabetes.
- An improved diet and lifestyle can prevent or reverse many NCDs with or without type 2 diabetes.
- If a person is overweight but is maintaining a healthy Mediterranean diet, the risks of developing many NCDs can be lower than a person who is of normal weight but who has a poor diet and lifestyle.
- An excellent diet can be enjoyable and reduce the risks of developing obesity, type 2 diabetes, and other NCDs.
- An excellent diet can be enjoyable and reduce the risks or the worsening of NCDs even if they're established with or without type 2 diabetes or obesity.

Getting the Most Nutritional Value from Your Foods

A central tenant is an understanding of nutrition and how and what you eat affects your blood glucose and your general health.

Numerous diets are promoted for people with diabetes, some that have little evidence to back them and many that advocate restricting foods or certain macronutrients. Researchers are learning that the lowfat/high-carbohydrate diets advised by many government agencies may be causing more harm than good. Furthermore, many health professionals are moving away from just using calorie counting and body mass index (BMI) as a measure of food intake and its consequences and moving toward a greater focus on portion sizes, the quality of foods, and their effect on glucose and insulin balance and broader effects of the choices people make.



REMEMBER

An excellent diet:

- **Provides optimum control of blood glucose.** We explore this more in the chapters in Part 1, which consider the role of good quality carbohydrates and nutrient combinations in foods.

- **Helps to achieve and maintain a healthy weight.** This is especially important for those people with diabetes who are overweight.
- **Has been shown to reduce the risk of other diseases, in particular those that are more common as complications of diabetes.** The components for an excellent diet should include not only good quality and healthy carbohydrates, fats, and proteins, but also should be rich in vitamins, micronutrients, and anti-inflammatory and antioxidant bioactive compounds that are protective and support optimum mental and physical health. We consider these in Chapter 4. Processed foods should be kept to a minimum or excluded.
- **Is sustainable so that its glycemic control, healthy weight, and anti-inflammatory benefits are maintained in the long term.** In other words, it's enjoyable, varied, and tasty, and you can incorporate it into your daily life.
- **Is ethical and sustainable for the environment.** Human health depends on the health of this beautiful planet.

We consider the three macronutrient groups — carbohydrates, proteins and fats — as well as micronutrients and vitamins in Chapter 2. In Chapter 4 we examine *bioactive compounds* — chemicals from plants found in small amounts in people's diet that may have considerable effects on promoting and maintaining health. We also show how the quality of your foods really matters.

We share detailed information about diabetes, its causes, treatments, and an approach to lifestyle that can empower you to take control of your glucose metabolism, prediabetes, diabetes, and weight, and enjoy excellent health and well-being in the recent editions of our books *Diabetes For Dummies* and *Diabetes Meal Planning and Nutrition For Dummies* (John Wiley & Sons, Inc.).

Exercising and Resting

Exercise is just as important as diet in controlling your blood glucose. A group of people who were expected to develop diabetes because their parents both had diabetes was asked to walk 30 minutes a day. Eighty percent of those individuals who did walk didn't develop the disease. These people didn't necessarily lose weight, but they did exercise.

Too many people complain that they just can't find the time to exercise. But a recent study showed that just 7½ minutes of highly intense exercise a week had a profound effect on the blood glucose. Here are some ways that different amounts of exercise can help you:

- Thirty minutes of exercise a day gets you in excellent physical shape and reduces your blood glucose substantially.
- Sixty minutes of exercise a day helps you to maintain weight loss and get you in even better physical shape.

An exercise partner helps ensure that you get out and do your thing. Having someone you can exercise with can be extremely helpful. Choose an activity you enjoy and are likely to maintain.



REMEMBER

Here are some more facts about exercise to keep in mind:

- You don't have to get in all your minutes of exercise in one session. Two 30-minute workouts are just as good as and possibly better than one 60-minute workout.
- Although walking is excellent exercise, especially for the older population and a great place to start for people who are sedentary, the benefits of more vigorous exercise and for a longer time are greater still.
- Everything counts when it comes to exercise. Your decision to take the stairs instead of the elevator may not seem like much, but if you do so day after day, it makes a profound difference. Another suggestion that may help over time is to park your car farther from your office or bike to the office.
- A *pedometer* (a small gadget worn on your belt that counts your steps, or now commonly incorporated into smart watches and mobile devices) may help you to achieve your exercise goals. An objective may be to get up to 10,000 steps a day by increasing your step count every week.

You also want to do something to strengthen your muscles. Larger muscles take in more glucose, providing another way of keeping it under control. You'll be surprised by how much your stamina will increase and how much your blood glucose will fall. Resistance training (weightlifting) may be just as important as aerobic exercise in improving diabetic control. In the Nurses' Health Study, for example, resistance training resulted in a substantial reduction in the occurrence of diabetes.



TIP

Place a daily limit on activities that are completely sedentary, such as watching television or scrolling on TikTok or Instagram. Use the time you might have once spent on these activities to exercise.

Knowing the New Blood Pressure Limits

Keeping your blood pressure in check is particularly important in preventing the macrovascular complications of diabetes. But elevated blood pressure also plays a role in bringing on eye disease, kidney disease, and neuropathy. You should have your blood pressure tested regularly.



REMEMBER

Studies have shown that previous blood pressure goals weren't significantly more beneficial and did raise the risk of low blood pressure, fainting, and dizziness. The new goal is to keep your blood pressure under 140/80 for most adults, however targets might be less tight for older people or alternatively more ambitious for people with diabetes and other conditions such as heart or kidney disease. You may want to get your own blood pressure monitor so that you can check it at home yourself.

The statistics about diabetes and high blood pressure are daunting. Seventy-one percent of people with diabetes have high blood pressure, but almost a third are unaware of it. Almost half of them weren't being treated for high blood pressure. Among the treated patients, less than half were treated in a way that reduced their pressure to lower than 130/80.



TIP

You can do plenty of things to lower your blood pressure, including losing weight, avoiding salt, eating more fruits and vegetables, and, of course, exercising. But if all else fails, your doctor may prescribe medication.

One class of drugs in particular is very useful for people with diabetes with high blood pressure: angiotensin converting enzyme inhibitors (ACE inhibitors), which are especially protective of your kidneys. If kidney damage is detected early, ACE inhibitors can reverse the damage.

SIMON'S JOURNEY TO COMBAT DIABETES

My (Simon) journey to combine medical practice with writing and speaking on the subject of diet and lifestyle began several years ago when emerging evidence began to show how powerfully the way people live affects their chances of becoming ill or flourishing in good health. As physicians, we're generally trained to approach our medical careers with the emphasis on using medicines to reverse established illness. However, I soon realized that the most rewarding approach to medicine was to combine the application of modern medical therapies with a broader paradigm to encourage and inspire people to take control of their health as much as possible through the ways they live their lives.

Many of my patients in Cambridge, England, at first perceived that the journey to an improved lifestyle would be one of pain and misery, but they soon found the opposite to be true. Equipped with a greater understanding of the ways in which exercise and diet (in the form of positive nutrition) can dramatically improve well-being was key to their success. Soon patients who were following a Mediterranean lifestyle were showing powerfully improving results, mirroring as individuals the evidence that was being documented in scientific research. During my career, I've seen rates of obesity, diabetes, and the illnesses associated with these conditions soar. It became clear that a compelling need exists to look after growing numbers of people with diabetes in our communities with the best possible medical care but also to be empowered to choose the route to optimum health and well-being through wise and enjoyable lifestyle decisions.

Enjoying a Healthful Lifestyle

Diabetes is just one part of your life. It can affect the rest of your lifestyle, however, and your lifestyle certainly affects your diabetes. In this section, we take up some of these other parts of your lifestyle, all of which you can alter to the benefit of your health and your diabetes.

Limiting your alcohol intake

A good place to start is with alcohol. A small glass of wine can be a pleasant addition to dinner, and some studies show that alcohol in moderation can lower the risk of a heart attack. In some groups of people, though it can also increase the risk of many types of cancer as well as liver disease, especially in excess. For a person with diabetes, it's especially important that food accompany the wine because alcohol reduces the blood glucose; a complication called hypoglycemia may occur (see the section "Short-term complications," earlier in this chapter).



WARNING

Never drink alcohol without food, especially when you're taking glucose-lowering medication.

The following people shouldn't drink alcohol at all:

- Pregnant women
- Women who are breastfeeding
- Children and adolescents
- People who take medications that interact with alcohol
- People with medical conditions that are worsened by alcohol, such as liver disease and certain diseases of the pancreas

AMY'S STORY — HELPING TO NOURISH OTHERS

My entire career was unintentionally based on diabetes. Had it not been for my mother's diagnosis with type 2 diabetes when I was 15, I'd probably have never thought about it. But I had the responsibility of cooking for my mom and our family, and I chose to use it as an opportunity to help heal her while creating delicious meals that the rest of us would enjoy as well. In those days, my actions were a simple labor of love that I never dreamed would lead to a career. I painfully witnessed my mother and others suffer complications from diabetes that I would love to eradicate forever.

For that reason, I decided to dedicate my life to help others nourish not only their bodies but their minds and spirits as well. I am now a Mediterranean Lifestyle Ambassador because I witnessed my family members living in Calabria, Italy, with relatively few major health complications and enjoying their lives much longer than most people do in the United States. It's not only their diet but also their mentality and lifestyle that makes the difference. Nowadays, each of my cookbooks attempts to capture those often unspoken secrets of the Mediterranean diet that make it so successful, while translating them in a manner that could be interpreted and followed anywhere.

My greatest goal is to have my readers enjoy as much "sweetness from life" as possible. I believe spending time with a loved one, having a good laugh, holding someone's hand, sharing hugs, watching sunsets, and whatever your daily pleasures happen to be are the glue that anchors a healthful diet and lifestyle together. These events give us the inspiration to continue and to make positive choices. I created the recipes in Part 2 with a desire to provide as many nutrients, vitamins, and minerals as possible while ensuring flavor and variety as well. I hope they're as fun for you to make as they are delicious to eat.



REMEMBER

Alcohol adds calories without any nutrition. Alcohol has no vitamins or minerals, but you do have to account for the calories in your diet. If you stop drinking alcohol, you may lose a significant amount of weight. For example, a person who has been drinking three drinks a night and stops might lose 26 pounds in a year.

Improving your lifestyle in other ways

Here are major ways you can improve the rest of your lifestyle:

- Enjoy meditation and other forms of mindfulness activities.
- Focus on your psychological well-being — seek support when you need it.
- Develop and maintain a positive approach to life.
- Discover ways to get healthful sleep.
- Find ways to spend more time doing what you love.
- Get out into nature as often as possible.
- Take naps — even short ones when you can.
- Avoid tobacco in any form. It is the number-one killer.
- Avoid illicit drugs.
- Drive safely.
- Socialize more! Benefit from relationships and your community.
- Maintain your sense of humor.



TIP

Try making changes one at a time, and when you think you have that one under control, move on to the next.