

THIN Diabetes, FAT Diabetes



Prevent Type 1
and
Cure Type 2

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Veritas Vos Liberabit

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Disclaimer



I am a science writer. I am not your doctor. If you have any questions about your own health or about what you should eat, please see a licensed healthcare professional. If you have food allergies or intolerances or any metabolic disease or are taking any prescription medications, talk to your healthcare provider before you make any major change in diet. Diabetics who make a major change in diet without adjusting their prescription medicine can end up hospitalized or dead from low blood sugar.

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Introduction



When people talk about diabetes (diabetes mellitus), they could mean any of several different diseases, all of which produce high blood sugar. Many people and even many doctors think that people with diabetes should avoid eating carbohydrates (sugars and starches). In reality, a starchy, low-fat diet is good for anyone with any form of diabetes mellitus, and it can cure the most common form.

Diabetes mellitus, which is usually just called diabetes, is a medical term that can refer to any of several different diseases. Each of these diseases has a different cause, but all of them have one thing in common. If left untreated, they cause a sugar called glucose to build up to toxic levels in the bloodstream. Some of that glucose in the blood came from the carbohydrates (sugars and starches) that the person ate. However, the body can also make glucose out of other things, such as protein. (That's why people can have sugar in their blood even if they eat no starch or sugar at all.) People **don't** get diabetes mellitus from eating too much starch and sugar. In fact, **diabetics need to eat a high-carbohydrate diet**. Instead, diabetes mellitus means that **the body has lost control over its blood chemistry**.

Blood sugar is a Goldilocks and the Three Bears type of problem. Having too much sugar in the blood can kill you. So can having too little sugar in the blood. A healthy person's body has a control system that normally keeps the blood sugar level just right (Figure 1). Diabetes means that something has gone wrong with this control system.

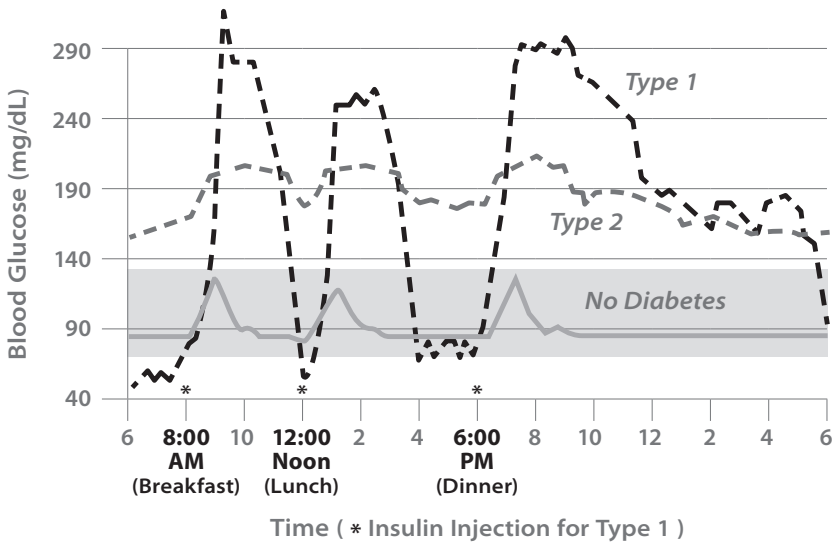


Figure 1. In a healthy person, blood sugar levels stay within the normal range pretty much all the time. Type 1 diabetes (thin diabetes) results from the failure of the pancreas to provide insulin. To stay alive, people with thin diabetes must get insulin by injection. (Unfortunately, nobody can do as good a job as a normal pancreas at injecting exactly the right amount of insulin at exactly the right time.) Type 2 diabetes results from the body's resistance to the effects of insulin. A person can have thin diabetes and fat diabetes at the same time.

Several things can go wrong with the body's system of controlling blood sugar. That's why there's more than one type of diabetes. Unfortunately, a person can have more than one of these problems at the same time. That's why people with diabetes need to understand all of the different types of diabetes (Table 1).

Most English-speaking people are confused by the names for the different types of diabetes. French-speaking people have no such confusion. They use the term *thin diabetes* (*diabète maigre*) to refer to the severe form of diabetes that tends to happen in children who are usually thin to begin with and who lose weight rapidly if the disease goes untreated. This form of diabetes used to be called juvenile diabetes because it often occurs in children. However, it can start at any age. Mary Tyler Moore was 33 years old when she got "juvenile" diabetes.

Thin diabetes is the form of diabetes that was always fatal in the days before insulin therapy. As a result, it has been called insulin-dependent diabetes. American doctors now call it type 1 diabetes.

Table 1. The main types of diabetes mellitus.

Type of Diabetes	Cause	Other Names
Thin Diabetes	Lack of insulin, usually after the immune system has destroyed the insulin-producing cells of the pancreas but sometimes after removal of the pancreas.	Type 1 diabetes, juvenile diabetes, insulin-dependent diabetes (IDDM), pancreatic diabetes, latent autoimmune diabetes of adults (slowly developing cases).
Fat Diabetes	Resistance to the effects of the hormone insulin, in overweight people who eat a fatty diet.	Type 2 diabetes, adult-onset diabetes, non-insulin-dependent diabetes (NIDDM).
Gestational Diabetes	Temporary resistance to the effects of insulin during pregnancy.	—
Genetic Diabetes	A genetic defect that leads to low insulin production or poor sensitivity to insulin.	Monogenic diabetes; there are several different kinds, including infantile-onset diabetes and maturity-onset diabetes of the young (MODY).

French-speaking people use the term *fat diabetes* (*diabète gras*) to refer to the relatively mild type of diabetes that occurs in overweight people and that can be cured by losing weight. This form of diabetes has been called adult-onset diabetes. But now that there are so many overweight children, pediatricians are seeing more cases of fat diabetes than thin diabetes among children. Fat diabetes has also been called non-insulin-dependent diabetes. But that term became confusing because so many people with fat diabetes are now taking insulin. American doctors now call it type 2 diabetes. A temporary case of fat diabetes that occurs during pregnancy is called gestational diabetes.

Most people with diabetes believe that their diabetes is genetic, which to them means that they were doomed to get it. However, studies of identical twins show us that genes play only a small role in the cause of thin diabetes and fat diabetes. Only a few, rare forms of diabetes are really due to a bad gene. Most of the truly genetic forms of diabetes are called monogenic diabetes because they can be linked to a mutation in one particular gene. Some of these genetic forms of diabetes are so mild that they are often mistaken for fat diabetes, if they are diagnosed at all. These mild forms are often easily managed with diet or pills. Other forms of genetic diabetes are so severe that they are easily mistaken for thin diabetes. These severe forms of genetic diabetes must be managed with insulin therapy, just like thin diabetes.

In a fasting person, blood glucose normally stays between 70 and 100 milligrams per deciliter (mg/dL). To qualify for a diagnosis of diabetes mellitus, a patient has to meet at least 1 of the following criteria:

- A glycated hemoglobin level (HbA_{1c}) of at least 6.5% (for an explanation of HbA_{1c}, see chapter 12).
- A blood sugar level of at least 126 mg/dL in a blood sample taken when the patient is fasting (i.e., has not eaten anything for at least 8 hours).
- A blood glucose level of at least 200 mg/dL during a glucose tolerance test (see chapter 4).
- A blood glucose level of at least 200 mg/dL in a “casual” blood sample (i.e., a blood sample taken without regard to when the patient ate last).

Patients whose fasting glucose is between 100 and 125 mg/dL are said to have “prediabetes.” They are considered to be at risk of developing thin diabetes or fat diabetes.

To figure out what kind of diabetes mellitus the patient has, doctors use other kinds of tests. To see whether the pancreas is making insulin, doctors measure the amount of insulin and C-peptide (a protein that is made along with insulin) in the blood. The doctor can also test the patient for the antibodies that attack the pancreas. Patients who

have low insulin production but no antibodies to their pancreas may have one of the genetic forms of diabetes, which I describe in chapter 16. Note that you can have more than one type of diabetes at the same time. People with thin diabetes or one of the rare genetic forms of diabetes can also have some degree of insulin resistance.

The goal in managing fat diabetes should be to cure the fat diabetes by correcting the diet. Fat diabetes is not really a disease. It is a defense against weight gain. Fat diabetes is actually a way for the body to resist gaining even more weight from a fattening, fatty diet. When people with fat diabetes switch to a low-fat (<10% of calories), high-fiber, high-carbohydrate diet, the fat diabetes goes away, even if they eat enough food to feel full.

Unfortunately, there is no cure for thin diabetes. However, there's a good chance that many cases could be prevented. As I explain in chapter 11, thin diabetes can be triggered by a protein in cow's milk. Simply removing animal milk from the diet could dramatically reduce the number of new cases of thin diabetes.

For people with the incurable forms of diabetes, the goal should be to keep blood sugar within a reasonable range. In the short run, severely high or low blood sugar can lead to sudden death. In the long run, even moderately high blood sugar can increase the risk of complications, such as blindness.

Dietary therapy is the key to managing any metabolic disease, including diabetes. The appropriate diet for someone with any form of diabetes is a low-fat, purely plant-based (vegan) diet. This kind of diet cures fat diabetes. It also gives people with the incurable forms of diabetes the best possible chance for long-term survival with healthy eyes, feet, and kidneys. Such a diet provides enough of all of the essential nutrients except for vitamin D (which you can get by exposing your skin to sunshine) and vitamin B₁₂ (which comes from bacteria). The only supplement that is routinely recommended for people on this kind of diet is vitamin B₁₂.

The diet should be based on unrefined starches: whole grains or starchy vegetables, such as potatoes or sweet potatoes. The diet should include lots of vegetables and fruit. However, the person with diabetes

should not eat any meats, dairy foods, fish, eggs, or foods that contain oil or shortening. In other words, diabetics should not eat anything that came from an animal. They should also avoid any concentrated fats and oils, even the supposedly healthy oils such as olive oil and canola oil (Table 2).

Table 2. Foods for people with diabetes to eat or avoid.

Eat	<ul style="list-style-type: none"> • Whole grains, including brown rice, whole wheat, corn, quinoa, buckwheat, etc. • Starchy vegetables, including potatoes, sweet potatoes, winter squashes, and cassava • Other vegetables • Fruits • Beans and peas and lentils (legumes)
Do Not Eat	<ul style="list-style-type: none"> • Meat • Fish • Dairy foods (milk, yogurt, cheese, butter) • Eggs • Oils (including olive oil and canola oil) and foods made with oil or shortening

The diet that is good for diabetics is also good for people who do not have diabetes. It helps them lose excess weight without feeling hungry. It cleans out their arteries and eliminates their risk of heart attack. It reduces their blood pressure and with it their risk of stroke. It decreases their risk of cancer and osteoporosis and autoimmune disease and Alzheimer's disease. Thus, if a family changes its diet to help a diabetic family member, everyone can benefit.

Many people who are eating the rich and fatty standard American diet suffer from high blood sugar and high blood pressure. Many of those people are taking prescription drugs to reduce their blood sugar and blood pressure. If they change to a healthy diet, they can stop taking most of those medications. But if they make a sudden change in diet while taking those medications, they could faint from low blood pressure or even die from low blood sugar. That's why people who are

sick or who are taking any prescription medication should talk to their healthcare professional before making any major change in diet.

Most people are surprised to hear that the most common form of diabetes is curable. They are even more surprised to hear that diabetics should eat lots of starchy foods, such as rice, bread, and potatoes. Most diabetics have been told to limit their intake of starchy foods because starch gets broken down into glucose. Why am I telling them something that is so different from what they have read on the Internet, or even from what they have heard from their doctor?

I became interested in diabetes when I was a teenager, after my grandmother got a diagnosis of what she called sugar diabetes. She eventually died of complications of her diabetes. Since then, I have met many other people with various types of diabetes. I have known several people who eventually died because of their diabetes. I have also met people who have lost their eyesight or their feet or needed a kidney transplant because of diabetes. Clearly, something had to be done to stop all this preventable death and suffering.

I learned a lot about diabetes from working as an editor in medical publishing. I learned a lot about nutrition and dietetics from working on nutrition textbooks. I also learned a lot about diabetes from working for a veterinary journal. Many dogs and cats get diabetes. Diabetes in a dog or a cat is a lot like diabetes in a human being. The insulin products that veterinarians prescribe for diabetic dogs and cats were actually made for human beings with diabetes. Diabetic dogs and cats can also suffer from the same kinds of complications as human diabetics, such as diabetic ketoacidosis. The treatment for those complications is pretty much the same for a dog or a cat as it is for a human being. However, I was originally told that there was one important difference. Fat diabetes in a cat would go away if the cat lost weight. To my delight, I found that fat diabetes in a human being can also be cured by weight loss. It can be cured even faster if the person switches from a fatty diet to a starchy diet.

I wrote this book because 30 million people in the United States have diabetes. Diabetes is our seventh leading cause of death in the

United States, and it does not have to be. Diabetes is also our leading cause of new cases of blindness, and it is the main medical reason for people to lose their feet. Diabetes is also a major cause of kidney failure. It increases the person's risk of heart attack, stroke, liver disease, cancer, osteoporosis, and Alzheimer's disease. Yet these deaths and this suffering could be prevented if people understood how to cure fat diabetes and prevent thin diabetes. People are not being told how to cure their fat diabetes. Nor are parents being told about the role of cow's milk in causing thin diabetes. People with thin diabetes are not being told about the value of a low-fat, high-carbohydrate diet for preventing complications. All of these facts are clearly documented in the scientific literature, but few laymen know them.

Even many medical doctors have been misinformed about nutrition and diabetes. There are two reasons for this problem. One is the neglect of nutrition in medical schools. For decades, medical schools in the United States have been neglecting nutrition and dietetics. The American Medical Association issued reports about this problem in the 1960s and 1970s. The National Academy of Sciences issued its own report in 1985. The American Society for Clinical Nutrition published yet another report in 2006. It's a chronic problem that is not going away by itself. If the medical profession does not solve this problem, then public health activists will have to solve it.

The other problem was simply awkward timing. Insulin was discovered in 1921. As a result, much of the important research on diet for people with diabetes was done in the 1920s through the 1950s. Unfortunately, PubMed, which is a computerized database of medical journal articles, originally went back only to 1966. As a result, doctors could easily find the reports of the studies of the new diabetes drugs but remained largely unaware of the important dietary studies. One of the goals of this book is to let doctors and patients know about the important dietary research from the 1920s through the 1950s.

Today, most doctors focus on the blood sugar and ignore the fat in the diet. They tell their patients to avoid eating sugars and starches, to keep their blood sugar from going too high. Yet that means that the patients will get a high percentage of their calories from fat.

Unfortunately, this fatty diet that doctors are urging their patients to eat can actually **make the fat diabetes worse**. It can also cause fat diabetes in someone with thin diabetes.

Doctors use prescription drugs to control the blood sugar in patients with fat diabetes. Unfortunately, when doctors make heavy use of those drugs to get really tight control of the patient's blood sugar, the patient's risk of death actually goes up. Instead, doctors should be teaching their patients with fat diabetes how to cure their diabetes by changing their diet.

Many of the things that I say in this book go against conventional wisdom. But you do not have to take my word for any of them. My goal in writing this book is to give you enough background knowledge about the history and biology of diabetes that you can figure out for yourself who is telling the truth. Diabetes has been a mystery since ancient times. In this book, I explain how that mystery was solved. Then you shall know the truth, and the truth shall set you free.

Summary

- The term *diabetes mellitus* refers to any of several diseases that cause sugar to build up in the bloodstream. It can refer to thin diabetes, fat diabetes, gestational diabetes, or monogenic diabetes.
- Thin diabetes is a severe, incurable disease that results from failure of the pancreas to produce insulin. It must be treated with insulin replacement. It has also been called juvenile diabetes, insulin-dependent diabetes, and type 1 diabetes.
- Fat diabetes is a milder problem that results from resistance to the effects of insulin. It has been called adult-onset diabetes, non-insulin-dependent diabetes, and type 2 diabetes. It can be cured by eating a low-fat, starchy diet.
- The same low-fat, starchy diet that cures fat diabetes and gestational diabetes is good for people with thin diabetes.
- The truly genetic forms of diabetes account for only about 2% of all cases of diabetes.