

The Different Types of Diabetes

Beyond Type 1 and Type 2. What you need to know.

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When discussing diabetes, we often associate the condition with type 1 diabetes and type 2 diabetes. True, these types are the most common, but there are several other types of diabetes.

Diabetes is not simple, but if we break it down very simply, it is a disease – regardless of the type – that affects glucose metabolism. This means that for whatever reason (depending on the type of diabetes), the body is unable to use glucose effectively.

Carbohydrates are one of our body's main energy sources; when we eat a carbohydrate source, such as an apple, the carbohydrate is broken down into glucose in our gastrointestinal system. The body is already making insulin in the pancreas (specifically, the beta cells of the pancreas). When the body senses an uptick in glucose levels, it increases its production of insulin. Insulin basically acts as a “key” to “unlock” the cells – insulin allows glucose to get inside cells, such as muscle, brain, and lung cells so that we can carry out our everyday functions.

With diabetes, the body may not be making

insulin or may not be using it effectively, causing hyperglycemia, or high blood sugar.

Type 2 Diabetes

Type 2 diabetes is undoubtedly the most prevalent, affecting approximately 30.3 million Americans. This equates to 9.4% of our United States population. Of this 30.3 million, 23.1 million are diagnosed, while 7.2 million are undiagnosed.

Luckily, type 2 diabetes affects predominantly adults – 193,000 Americans under the age of 20 are estimated to be affected by type 2 diabetes. This is approximately 0.24% of our population.

Type 2 diabetes is characterized by insulin resistance. The pancreas is still able secrete insulin. Unfortunately, the body cannot use the insulin effectively, so the pancreas continues to make extra insulin in order to keep blood glucose levels normal. This means that glucose levels may initially be normal, while insulin levels are high. Unfortunately, the pancreas eventually can't keep up and glucose levels will rise.

Type 2 diabetes is treated with lifestyle changes, such as diet and exercise changes, as well

as medications, and sometimes insulin.

Type 1 Diabetes

Compared to type 2 diabetes, type 1 diabetes affects only 1.25 million American adults and children.

At one point, type 1 diabetes, was called “insulin-dependent” or “juvenile diabetes” but we don't call it that anymore because people with type 2 diabetes may also be insulin-dependent, and we now know that type 1 diabetes can occur at any age, although it is diagnosed more frequently in childhood.

Type 1 diabetes is an autoimmune disease. This means that the body perceives the beta cells of the pancreas as foreign and attacks them. Because the body destroys the beta cells, which make the body's insulin, exogenous insulin is required for survival.

Similar to type 1 diabetes, staying active and eating healthy foods is recommended. Careful management of glucose levels is required – typically this means monitoring glucose levels with a glucose meter or a continuous glucose monitor

(CGM) and administering insulin – both rapid-acting and long-acting, or using an insulin pump. Insulin may be dosed according to the carbohydrates eaten, as well as based on blood glucose levels.

Missing insulin doses can be dangerous in the short-term as well as the long-term; diabetic ketoacidosis (DKA) is a life-threatening condition that can occur without insulin administration. Long-term complications without proper management of insulin include stroke, neuropathy, and poor wound healing, to name a few. Long-term complications can occur to those with type 2 diabetes as well.

Gestational Diabetes

Gestational diabetes is a specific type of diabetes that occurs only in pregnancy – it resolves upon delivery of the baby.

Gestational diabetes can be confusing to pregnant mothers because it can occur to anyone – and just because a mother has it with one pregnancy does not necessarily mean she will have gestational diabetes in later pregnancies.

Gestational diabetes typically occurs in the second half of pregnancy. The placenta, which connects the mother and baby and provides necessary nutrients, also produces hormones. Unfortunately, the placenta can impair the action of insulin. As the baby grows, the placenta also grows, and these hormone levels begin to rise.

Gestational diabetes can often be treated with a carbohydrate-controlled diet and exercise. Occasionally, insulin is required.

LADA

Latent autoimmune diabetes in adults, or LADA, is often called “type 1.5 diabetes” because it behaves similarly to type 1 diabetes. LADA is diagnosed after the age of 30 and is an autoimmune condition. Unlike type 1 diabetes, it is extremely slow to progress – those with LADA may not require insulin for months or even years after diagnosis.

It is not uncommon for those with LADA to be misdiagnosed as having type 2 diabetes. According to Mayo Clinic, “Because they’re older when symptoms develop than is typical for someone with type 1 diabetes and because initially



Gestational diabetes can often be treated with a carbohydrate-controlled diet and exercise.

their pancreases still produce some insulin, people with LADA are often misdiagnosed with type 2 diabetes.”

Initially, LADA can be treated with diet and exercise – and maybe even oral medications. Eventually, insulin will be required because there will be a time when the pancreas will stop producing insulin.

MODY

Maturity onset diabetes of the young, or MODY, is a genetic form of diabetes. Unlike other forms of diabetes, which may or may not have a genetic component, this form is always passed on from birth.

MODY is caused by one of 11 genes and, according to Harvard Health, may account for up to 5% of all diabetes.

Harvard Health also notes that MODY has more in common with type 1 diabetes than type 2 diabetes because the pancreas is unable to make enough insulin. In addition, those with MODY are more likely to have a lean body habi-

tus, but this is not always true – someone who is overweight or obese can also have MODY as it is genetic diabetes.

There are 11 types of MODY; types seven through 11 were recently discovered. The treatment depends on the subtype of MODY:

- MODY 2 is typically managed with a healthy diet and exercise.
- MODY 1, 3, and 4 are managed with a medication from the drug class sulfonylureas, which causes the pancreas to produce more insulin.
- MODY 5 is treated with a variety of treatments as it can cause a several medical problems that are unrelated to diabetes.
- MODY seven through 11 are may respond to treatments for the aforementioned types.

As MODY can mimic type 1 diabetes and type 2 diabetes, it is important to achieve a proper diagnosis. Genetic testing is the most definitive way to diagnose MODY. ■

Resources

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