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Diabetes mellitus

Diabetes mellitus, commonly known as diabetes, is a metabolic disease that causes high blood sugar. The hormone insulin moves sugar from the blood into your cells to be stored or used for energy. With diabetes, your body either doesn't make enough insulin or can't effectively use the insulin it does make.

Untreated high blood sugar from diabetes can damage your nerves, eyes, kidneys, and other organs.

There are a few different types of diabetes:

- Type 1 diabetes is an autoimmune disease. The immune system attacks and destroys cells in the pancreas, where insulin is made. It's unclear what causes this attack. About 10 percent of people with diabetes have this type.
- Type 2 diabetes occurs when your body becomes resistant to insulin, and sugar builds up in your blood.

- Prediabetes occurs when your blood sugar is higher than normal, but it's not high enough for a diagnosis of type 2 diabetes.
- Gestational diabetes is high blood sugar during pregnancy. Insulin-blocking hormones produced by the placenta cause this type of diabetes.

A rare condition called diabetes insipidus is not related to diabetes mellitus, although it has a similar name. It's a different condition in which your kidneys remove too much fluid from your body.

Each type of diabetes has unique symptoms, causes, and treatments. Learn more about how these types differ from one another.

Symptoms of diabetes

Diabetes symptoms are caused by rising blood sugar.

General symptoms

The general symptoms of diabetes include:

- increased hunger
- increased thirst
- weight loss
- frequent urination
- blurry vision
- extreme fatigue
- sores that don't heal

Symptoms in men

In addition to the general symptoms of diabetes, men with diabetes may have a decreased sex drive, erectile dysfunction (ED), and poor muscle strength.

Symptoms in women

Women with diabetes can also have symptoms such as urinary tract infections, yeast infections, and dry, itchy skin.

Type 1 diabetes

Symptoms of type 1 diabetes can include:

- extreme hunger
- increased thirst
- unintentional weight loss
- frequent urination
- blurry vision
- tiredness

It may also result in mood changes.

Type 2 diabetes

Symptoms of type 2 diabetes can include:

- increased hunger
- increased thirst
- increased urination
- blurry vision

- tiredness
- sores that are slow to heal

It may also cause recurring infections. This is because elevated glucose levels make it harder for the body to heal.

Causes of diabetes

Different causes are associated with each type of diabetes.

Type 1 diabetes

Doctors don't know exactly what causes type 1 diabetes. For some reason, the immune system mistakenly attacks and destroys insulin-producing beta cells in the pancreas.

Genes may play a role in some people. It's also possible that a virus sets off the immune system attack.

Type 2 diabetes

Type 2 diabetes stems from a combination of genetics and lifestyle factors. Being overweight or obese increases your risk too. Carrying extra weight, especially in your belly, makes your cells more resistant to the effects of insulin on your blood sugar.

This condition runs in families. Family members share genes that make them more likely to get type 2 diabetes and to be overweight.

Diabetes risk factors

Certain factors increase your risk for diabetes.

- are age 45 or older
- have a parent or sibling with the condition
- aren't physically active
- have had gestational diabetes
- have prediabetes
- have high blood pressure, high cholesterol, or high triglycerides
- have African American, Hispanic or Latino American, Alaska Native, Pacific Islander, American Indian, or Asian American ancestry

Diabetes complications

High blood sugar damages organs and tissues throughout your body. The higher your blood sugar is and the longer you live with it, the greater your risk for complications.

Complications associated with diabetes include:

- heart disease, heart attack, and stroke
- neuropathy
- nephropathy
- retinopathy and vision loss
- hearing loss
- foot damage such as infections and sores that don't heal
- skin conditions such as bacterial and fungal infections
- depression
- dementia

Treatment of diabetes

Doctors treat diabetes with a few different medications. Some of these drugs are taken by mouth, while others are available as injections.

Type 1 diabetes

Insulin is the main treatment for type 1 diabetes. It replaces the hormone your body isn't able to produce.

There are four types of insulin that are most commonly used. They're differentiated by how quickly they start to work, and how long their effects last:

- Rapid-acting insulin starts to work within 15 minutes and its effects last for 3 to 4 hours.
- Short-acting insulin starts to work within 30 minutes and lasts 6 to 8 hours.
- Intermediate-acting insulin starts to work within 1 to 2 hours and lasts 12 to 18 hours.
- Long-acting insulin starts to work a few hours after injection and lasts 24 hours or longer.

Type 2 diabetes

Diet and exercise can help some people manage type 2 diabetes. If lifestyle changes aren't enough to lower your blood sugar, you'll need to take medication.

These drugs lower your blood sugar in a variety of ways:

Types of drug	How they work	Example(s)
Alpha-glucosidase inhibitors	Slow your body's breakdown of sugars and starchy foods	Acarbose (Precose) and miglitol (Glyset)
Biguanides	Reduce the amount of glucose your liver makes	Metformin (Glucophage)
DPP-4 inhibitors	Improve your blood sugar	Linagliptin (Tradjenta), saxagliptin (Onglyza),

	without making it drop too low	and sitagliptin (Januvia)
Glucagon-like peptides	Change the way your body produces insulin	Dulaglutide (Trulicity), exenatide (Byetta), and liraglutide (Victoza)
Meglitinides	Stimulate your pancreas to release more insulin	Nateglinide (Starlix) and repaglinide (Prandin)
SGLT2 inhibitors	Release more glucose into the urine	Canagliflozin (Invokana) and dapagliflozin (Farxiga)
Sulfonylureas	Stimulate your pancreas to release more insulin	Glyburide (DiaBeta, Glynase), glipizide (Glucotrol), and glimepiride (Amaryl)
Thiazolidinediones	Help insulin work better	Pioglitazone (Actos) and rosiglitazone (Avandia)

You may need to take more than one of these drugs. Some people with type 2 diabetes also take insulin.

Diabetes and diet

Healthy eating is a central part of managing diabetes. In some cases, changing your diet may be enough to control the disease.

In order to keep your blood sugar levels steady, try to eat small meals throughout the day. Emphasize healthy foods such as:

- fruits
- vegetables
- whole grains
- lean protein such as poultry and fish
- healthy fats such as olive oil and nuts

Diabetes diagnosis

Doctors use these blood tests to diagnose prediabetes and diabetes:

- The fasting plasma glucose (FPG) test measures your blood sugar after you've fasted for 8 hours.
- The A1C test provides a snapshot of your blood sugar levels over the previous 3 months.
- During the glucose challenge test, your blood sugar is checked an hour after you drink a sugary liquid.
- During the 3 hour glucose tolerance test, your blood sugar is checked after you fast overnight and then drink a sugary liquid.

Diabetes prevention

If you've been diagnosed with prediabetes, here are a few things you can do to delay or prevent type 2 diabetes:

- Get at least 150 minutes per week of aerobic exercise, such as walking or cycling.
- Cut saturated and trans fats, along with refined carbohydrates, out of your diet.
- Eat more fruits, vegetables, and whole grains.
- Eat smaller portions.
- Try to lose 7 percent Trusted Source of your body weight if you're overweight or obese.