

Type 2 diabetes in children

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Overview

Type 2 diabetes in children is a chronic disease that affects the way your child's body processes sugar (glucose) for fuel. Without treatment, the disorder causes sugar to build up in the bloodstream, which can lead to serious long-term consequences.

Type 2 diabetes occurs more commonly in adults. In fact, it used to be called adult-onset diabetes. But the increasing number of children with obesity has led to more cases of type 2 diabetes in younger people.

There's plenty you can do to help manage or prevent type 2 diabetes in your child. Encourage your child to eat healthy foods, get plenty of physical activity and maintain a healthy weight. If healthy eating and exercise aren't enough to control type 2 diabetes, oral medication or insulin treatment may be needed.

Products & Services

[A Book: The Essential Diabetes Book](#)

Symptoms

Type 2 diabetes in children may develop so gradually that there are no noticeable symptoms. Sometimes, the disorder is diagnosed during a routine check-up.

Some children might experience these signs and symptoms as a result of too much sugar in their bloodstreams:

- Increased thirst
- Frequent urination
- Increased hunger
- Fatigue
- Blurry vision
- Darkened areas of skin, most often around the neck or in the armpits and groin
- Unintended weight loss, although this is less common in children with type 2 diabetes than in children with type 1 diabetes
- Frequent infections

When to see a doctor

See your child's health care provider if you notice any of the signs or symptoms of type 2 diabetes. Undiagnosed, the disease can cause serious damage.

Diabetes screening is recommended for children who have started puberty or are at least 10 years old, who are overweight or obese, and who have at least one other risk factor for type 2 diabetes.

Causes

The exact cause of type 2 diabetes is unknown. But family history and genetics appear to play an important role. What is clear is that children with type 2 diabetes can't process sugar (glucose) properly.

Most of the sugar in the body comes from food. When food is digested, sugar enters the bloodstream. Insulin allows sugar to enter the cells — and lowers the amount of sugar in the blood.

Insulin is produced by a gland located behind the stomach called the pancreas. The pancreas sends insulin to the blood when food is eaten. When the blood sugar level starts to drop, the pancreas slows down the secretion of insulin into the blood.

When your child has type 2 diabetes, this process doesn't work as well. As a result, instead of fueling cells, sugar builds up in your child's bloodstream. This can happen because:

- The pancreas may not make enough insulin
- The cells become resistant to insulin and don't allow as much sugar in

Risk factors

Researchers don't fully understand why some children develop type 2 diabetes and others don't, even if they have similar risk factors. However, it's clear that certain factors increase the risk, including:

- **Weight.** Being overweight is a strong risk factor for type 2 diabetes in children. The more fatty tissue children have — especially inside and between the muscle and skin around the abdomen — the more resistant their bodies' cells become to insulin.

- **Inactivity.** The less active children are, the greater their risk of type 2 diabetes.
- **Diet.** Eating red meat and processed meat and drinking sugar-sweetened beverages is associated with a higher risk of type 2 diabetes.
- **Family history.** Children's risk of type 2 diabetes increases if they have a parent or sibling with the disease.
- **Race or ethnicity.** Although it's unclear why, certain people — including Black, Hispanic, American Indian and Asian American people — are more likely to develop type 2 diabetes.
- **Age and sex.** Many children develop type 2 diabetes in their early teens, but it may occur at any age. Adolescent girls are more likely to develop type 2 diabetes than are adolescent boys.
- **Maternal gestational diabetes.** Children born to women who had gestational diabetes during pregnancy have a higher risk of developing type 2 diabetes.
- **Low birth weight or preterm birth.** Having a low birth weight is associated with a higher risk of developing type 2 diabetes. Babies born prematurely — before 39 to 42 weeks' gestation — have a greater risk of type 2 diabetes.

Type 2 diabetes in children is often associated with metabolic syndrome and polycystic ovarian syndrome.

Metabolic syndrome

When certain conditions occur with obesity, they are associated with insulin resistance and can increase the risk of diabetes — and heart disease and stroke. A combination of the following conditions is often called metabolic syndrome:

- High blood pressure
- Low levels of high-density lipoproteins (HDL), the "good" cholesterol
- High triglycerides

- High blood sugar levels
- Large waist size

Polycystic ovary syndrome

Polycystic ovary syndrome (PCOS) affects young females after puberty. PCOS is caused by an imbalance of hormones, resulting in signs such as weight gain, irregular menstrual periods, and excess face and body hair. People with PCOS often have problems with metabolism that can result in insulin resistance and type 2 diabetes.

Complications

Type 2 diabetes can affect nearly every organ in your child's body, including the blood vessels, nerves, eyes and kidneys. The long-term complications of type 2 diabetes develop gradually over many years. Eventually, diabetes complications may be severe or even life-threatening.

Complications of type 2 diabetes are related to high blood sugar and include:

- High cholesterol
- Heart and blood vessel disease
- Stroke
- Nerve damage
- Kidney disease
- Eye disease, including blindness

Keeping your child's blood sugar level close to the standard range most of the time can dramatically reduce the risk of these complications. You can help your child prevent diabetes complications by:

- Working with your child to maintain good blood sugar control as much as possible

- Teaching your child the importance of healthy eating and participating in regular physical activity
 - Scheduling regular visits with your child's diabetes treatment team
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Prevention

Healthy-lifestyle choices can help prevent type 2 diabetes in children. Encourage your child to:

- **Eat healthy foods.** Offer your child foods low in fat and calories. Focus on fruits, vegetables and whole grains. Strive for variety to prevent boredom.
- **Get more physical activity.** Encourage your child to become active. Sign up your child for a sports team or dance lessons.

Better yet, make it a family affair. The lifestyle choices that can help prevent type 2 diabetes in children can do the same for adults.

By Mayo Clinic Staff

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