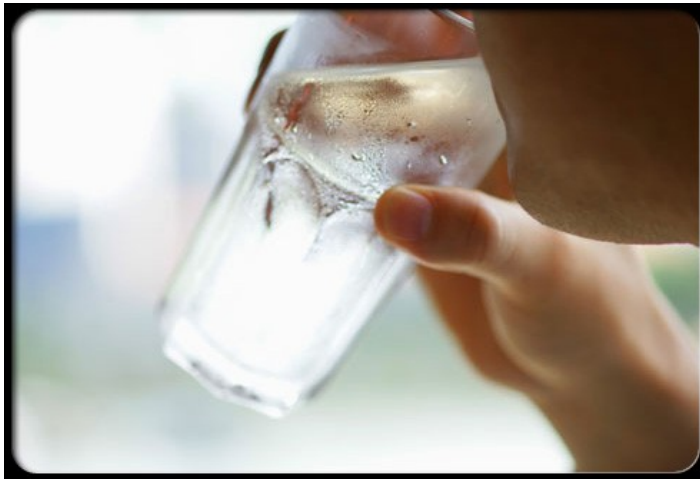


Type 1 Diabetes -- Symptoms, Causes and Treatment



What Is Type 1 Diabetes?

In people with type 1 diabetes, the pancreas cannot make insulin. This vital hormone helps the body's cells convert sugar into energy. Without it, sugar builds up in the blood and can reach dangerous levels. To avoid life-threatening complications, people with type 1 diabetes must take some form of insulin for their entire lives.



Warning Sign: Unusual Thirst

The symptoms of type 1 diabetes tend to come on suddenly and may include:

- Feeling more thirsty than usual
- Dry mouth
- Fruity breath
- Frequent urination



Warning Sign: Weight Loss

As blood sugar levels remain high, type 1 diabetes often leads to:

- Unintentional weight loss
- Increase in appetite
- Lack of energy, drowsiness



Warning Sign: Skin Problems

Many people with type 1 diabetes experience uncomfortable skin conditions, including:

- Bacterial infections
- Fungal infections
- Itching, dry skin, poor circulation

Girls with type 1 diabetes are more likely to get genital yeast infections. Babies can develop candidiasis, a severe form of diaper rash caused by yeast that can easily spread from the diaper area to the thighs and stomach.

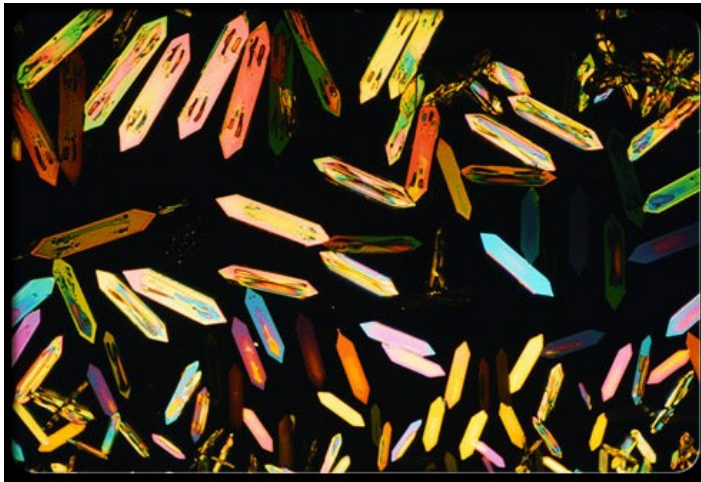


More Dangerous Signs

When blood sugars are not controlled, type 1 diabetes can cause more serious symptoms, such as:

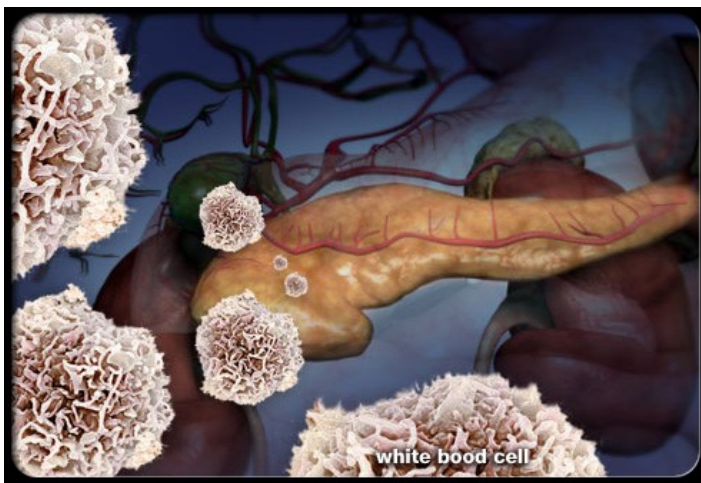
- Numbness or tingling in the feet
- Blurred vision
- Low blood sugar/hypoglycemia
- Loss of consciousness

Some patients have no obvious warning signs before falling into a diabetic coma, which requires emergency treatment.



More Dangerous Signs: Ketoacidosis

Without treatment, type 1 diabetes deprives your cells of the sugar they need for energy. Your body starts burning fat for energy instead, which causes ketones to build up in the blood. These are acids that can poison the body. High levels of acid in your blood and the other abnormalities that result from the change in your blood's pH level may trigger a life-threatening coma known as diabetic ketoacidosis. This is an emergency that must be treated quickly and oftentimes in the hospital.



Type 1 vs. Type 2 Diabetes

In type 1 diabetes, the body's immune system mistakenly attacks and destroys the pancreatic cells that produce insulin. In type 2 diabetes, the pancreas is not under attack and usually produces enough insulin. But for numerous reasons, the body doesn't use the insulin effectively. The symptoms of the two forms are similar, but usually come on more rapidly in people with type 1.



What Causes Type 1 Diabetes?

Doctors aren't sure what makes the immune system turn against the pancreas, but most suspect a combination of genetic susceptibility and environmental factors. Scientists have identified 50 genes or gene regions that raise the risk of developing type 1 diabetes. But genetics alone don't account for all the risk, so having these genes doesn't mean that you'll develop type 1 diabetes. Some researchers believe that environmental triggers, such as a virus, or dietary or pregnancy-related factors may play a role as well.



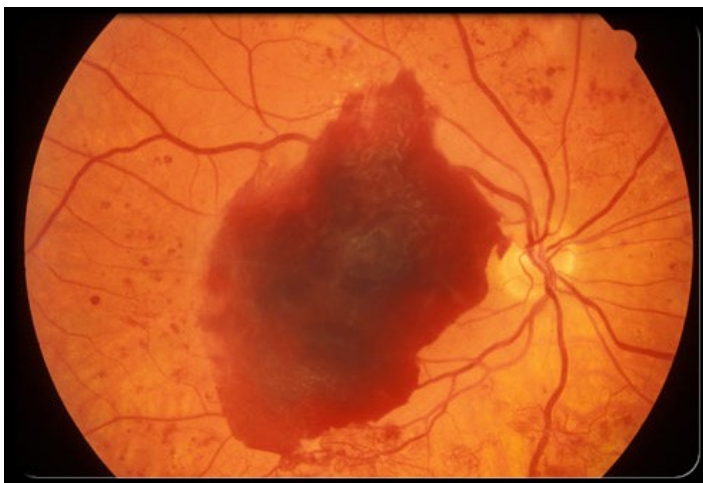
Who Gets Type 1 Diabetes?

Type 1 diabetes can develop at any age. However, it accounts for two-thirds of the new cases of diabetes diagnosed in those under the age of 19. There appear to be two peaks in the "age of onset": the first in early childhood and the second during puberty. The condition affects males and females equally, but is more common in whites than in other ethnic groups. According to the World Health Organization, type 1 diabetes is rare in most African, Native American, and Asian populations.



Diagnosing Type 1 Diabetes

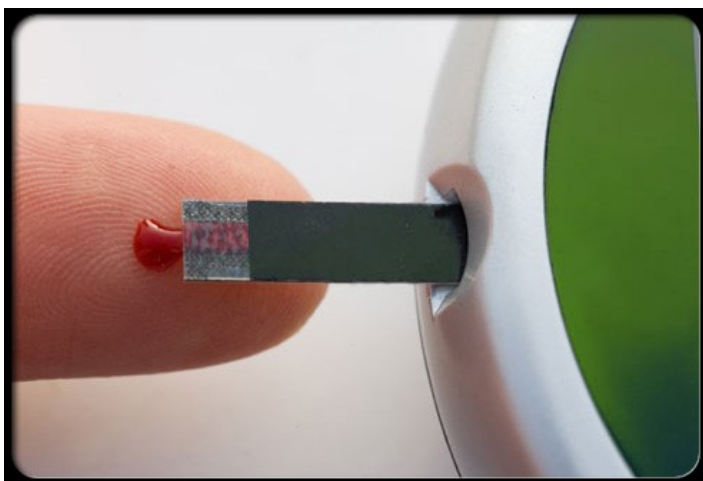
Simple blood tests can diagnose diabetes. A fasting blood sugar test or a random blood sugar test (plus the presence of symptoms) can be used. An A1c test, which reveals average blood sugar levels for the past 2-3 months, can also be used. Tests should be repeated on two separate days to diagnose diabetes. A less convenient glucose tolerance test will also help determine whether you have diabetes. If you're diagnosed with type 1 diabetes, your doctor may be able to determine the type by checking for certain antibodies in the blood.



Long-Term Complications

Prolonged high blood sugar can damage many of the body's systems over time. People with type 1 diabetes have a higher risk of:

- Heart disease and stroke
- Kidney failure
- Vision problems and blindness
- Gum disease and tooth loss
- Nerve damage in the hands, feet, and organs

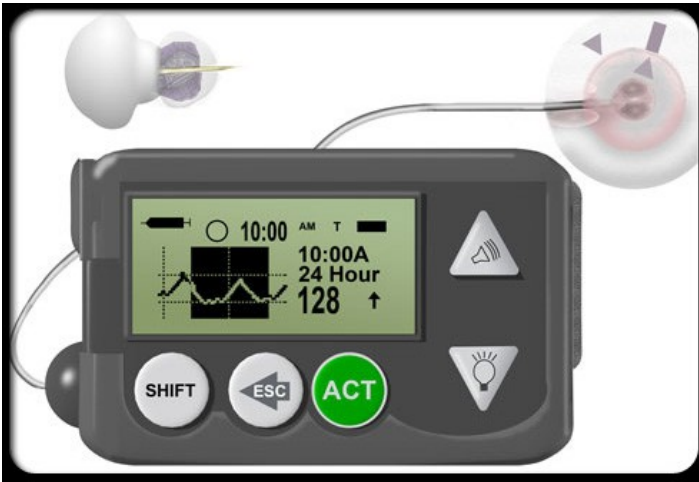


Monitoring Your Blood Sugar

The first step toward preventing complications is to regularly monitor your blood sugar or glucose level. This involves pricking your finger, putting a drop of blood onto a test strip, and putting the strip into a glucose meter. The results will help you optimize your treatment plan. When your blood sugar stays near the normal range, you'll have more energy, fewer skin problems, and a reduced risk of heart disease and kidney damage.

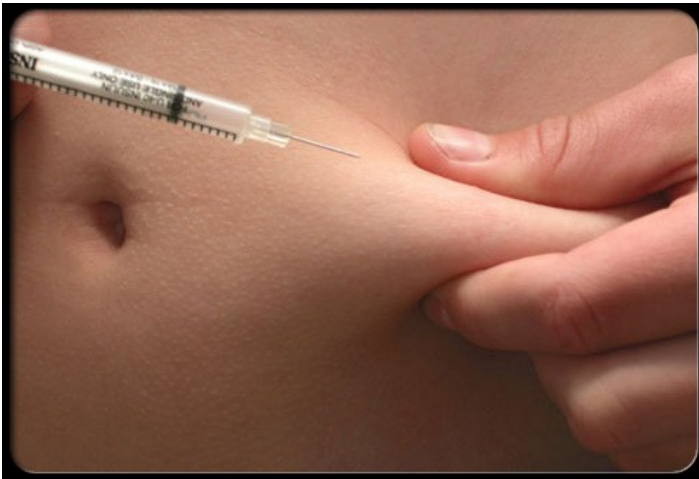
Continuous Glucose Monitoring

Another way to check blood sugar patterns is with a continuous glucose monitoring system. A sensor measures the level of glucose in the tissue every 10 seconds and sends the information to a cell phone-sized device called a "monitor" that you wear. The system automatically records an average glucose value every five minutes for up to 72 hours. The device is not intended for day-to-day monitoring or long-term self-care, and it is not a replacement for standard blood sugar monitoring. It is only intended for use to discover trends in blood sugar levels.



Diabetes Treatment: Insulin Shots

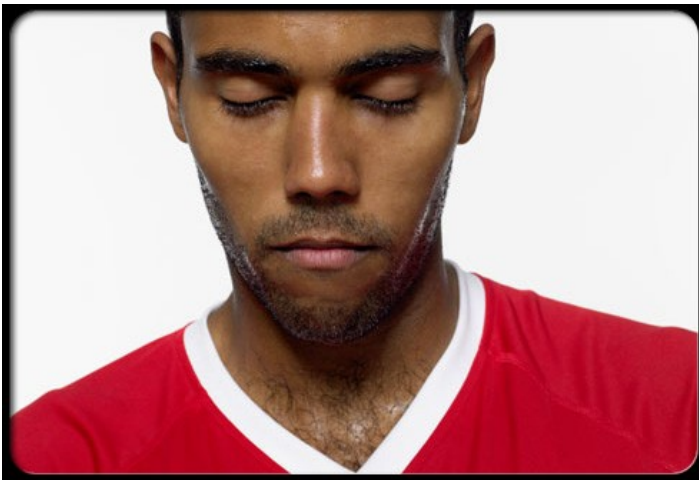
Everyone with type 1 diabetes must take insulin to help the body process blood sugar. Most patients take insulin as an injection and need multiple shots per day. Your healthcare provider will explain how to adjust your insulin shots based on the results of your blood sugar testing. The goal is to keep glucose levels in the normal range as often as possible.



Insulin Reaction Warning Signs

Taking too much insulin can lower your blood sugar to dangerous levels. This is called an insulin reaction. These reactions can be mild, moderate, or severe, requiring the help of others. Warning signs include:

- Exhaustion or excessive yawning
- Being unable to speak or think clearly
- Loss of muscle coordination
- Sweating, twitching, turning pale
- Seizures
- Loss of consciousness



Neutralizing an Insulin Reaction

People who take insulin should carry at least 15 grams of a quick-acting carb at all times. Fast carbs are a way to bring the blood sugar up quickly to combat an insulin reaction. Examples include:

- 1/2 cup of fruit juice or non-diet soda
- 1 cup of milk
- 2 tablespoons of raisins
- 3 glucose tablets or 5 Lifesavers

If your blood sugar is still too low after 15 minutes, have another 15 grams. For a severe reaction, a drug called glucagon should be injected under the skin by a family member.



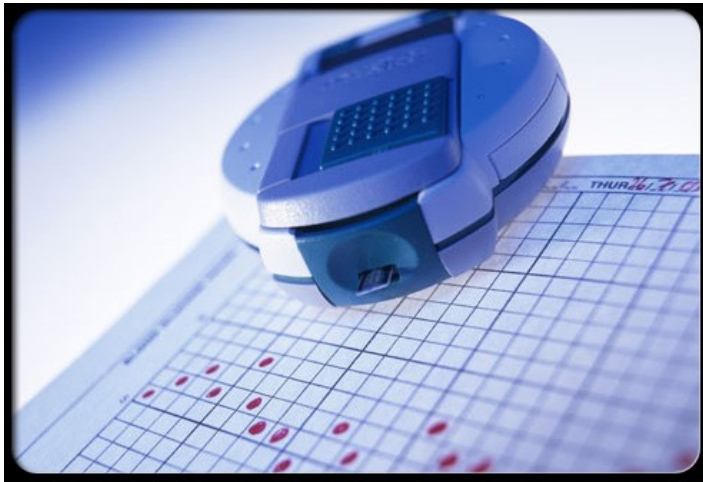
Diabetes Treatment: Insulin Pump

One way to reduce the odds of an insulin reaction is to use an insulin pump. This device provides insulin through a tiny tube inserted into the skin. It delivers insulin around the clock, eliminating the need for insulin shots. An insulin pump can help keep your blood sugar more stable and may allow more flexibility in planning your meals. Insulin pumps do have some disadvantages, so talk to your doctor to learn if this option is right for you.



How Well Is Your Treatment Working?

To find out how well your treatment is working, your doctor will probably suggest you have an A1c blood test every three to six months. This test reveals how well your blood sugar has been controlled over the past two to three months. If the results show poor blood sugar control, you may need to adjust your insulin therapy, meal planning, or physical activity.



Pancreatic Islet Cell Transplant

If insulin therapy fails to control your blood sugar or you have frequent insulin reactions, you may be a candidate for pancreatic islet cell transplant. Still an experimental procedure, a surgeon transfers healthy insulin-producing cells from a donor into the pancreas of someone with type 1 diabetes. Unfortunately, the results may last only few years. Medications used to prevent rejection are necessary and can have very serious side effects.



Type 1 Diabetes and Exercise

People with type 1 diabetes need to take precautions when exercising. To prevent a sudden drop in blood sugar, your health care team may recommend:

- Checking your blood sugar before exercising
- Adjusting your insulin dosage before exercising
- Eating a snack before or during exercise

Your doctor may also suggest checking your urine for ketones, a sign that your blood sugar is too high. Avoid strenuous activity whenever ketones are present.





Type 1 Diabetes and Diet

There are many myths about what people with diabetes can and cannot eat. The reality is there are no "off limits" foods. You can eat sweets as part of a well-balanced diet and treatment plan. The key is to work with your health care team to balance your insulin therapy, meals, and level of physical activity.



Type 1 Diabetes and Pregnancy

Let your doctor know if you plan to become pregnant. When type 1 diabetes is poorly controlled, it can cause complications, including birth defects. Achieving good blood sugar control before conception lowers the risk of miscarriage and birth defects to a rate similar to that of the general population. It also reduces the risk of complications, such as dangerous increases in blood pressure and damage to the retina in the mother.



Type 1 Diabetes in Children

When a child is diagnosed with diabetes, it affects the whole family in a very practical way. Parents must help children monitor blood sugar, plan meals, and adjust insulin dosages around the clock. Because diabetes requires 24-hour maintenance, arrangements must be made for treatment during school and extracurricular activities. Laws vary from state to state regarding which employees may administer insulin at school.



Hope for an Artificial Pancreas

Researchers are developing a system dubbed the artificial pancreas -- a combination of an insulin pump and continuous glucose monitor controlled by a complex computer program. The goal is for the system to automatically release insulin in response to blood sugar levels, and to reduce the release of insulin when blood sugars drop, just the way a real pancreas does. Early trials suggest the approach can improve blood sugar control. An effective artificial pancreas could one day reduce the constant maintenance associated with type 1 diabetes.

Source: http://www.emedicinehealth.com/slideshow_pictures_type_1_diabetes/article_em.htm