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## Patient information: Diabetes mellitus type 1: Overview (Beyond the Basics)

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### TYPE 1 DIABETES OVERVIEW

Type 1 diabetes mellitus is a chronic medical condition that occurs when the pancreas, an organ in the abdomen, produces very little or no insulin ([figure 1](#)). Insulin is a hormone that helps the body to absorb and use glucose and other nutrients from food, store fat, and build up protein. Without insulin, blood glucose (sugar) levels become higher than normal.

Type 1 diabetes requires regular blood sugar monitoring and treatment with insulin. Treatment, lifestyle adjustments, and self-care can control blood sugar levels and minimize the risk of disease-related complications.

Type 1 diabetes usually begins in childhood or young adulthood, but can develop at any age. In the United States, Canada, and Europe, type 1 diabetes accounts for 5 to 10 percent of all cases of diabetes.

Other topics that discuss type 1 diabetes are available.

- (See "[Patient information: Diabetes mellitus type 1: Insulin treatment \(Beyond the Basics\)](#)".)
- (See "[Patient information: Self-blood glucose monitoring in diabetes mellitus \(Beyond the Basics\)](#)".)
- (See "[Patient information: Type 1 diabetes mellitus and diet \(Beyond the Basics\)](#)".)
- (See "[Patient information: Hypoglycemia \(low blood sugar\) in diabetes mellitus \(Beyond the Basics\)](#)".)
- (See "[Patient information: Care during pregnancy for women with type 1 or 2 diabetes mellitus \(Beyond the Basics\)](#)".)

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### THE IMPACT OF TYPE 1 DIABETES

Being diagnosed with type 1 diabetes can be a frightening and overwhelming experience, and it is common to have questions about why it developed, what it means for long-term health, and how it will affect everyday life.

For most patients, the first few months after being diagnosed are filled with emotional highs and lows. You and your family can use this time to learn as much as possible so that diabetes-related care (eg, self-blood sugar testing, medical appointments, daily insulin) becomes a "normal" part of your routine. (See "[Patient information: Self-blood glucose monitoring in diabetes mellitus \(Beyond the Basics\)](#)".)

In addition, you should talk with your doctor or nurse about resources that are available for medical as well as psychological support. This might include group classes, meetings with a nutritionist, social

worker, or nurse educator, and other educational resources such as books, web sites, or magazines. Several of these resources are listed below (see ['Where to get more information'](#) below).

Despite the risks associated with type 1 diabetes, most people can lead active lives and continue to enjoy the foods and activities they enjoyed before being diagnosed with diabetes. Diabetes does not mean an end to special occasion foods like birthday cake. With a little advanced planning, most people with diabetes can enjoy exercise in almost any form.

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## TYPE 1 DIABETES CAUSES

Type 1 diabetes usually develops when the immune system destroys the insulin-producing cells (called the beta cells) in the pancreas. This is called an autoimmune response. The cause of this abnormal immune response is being studied.

This process occurs over many months or years, and there may be no symptoms of diabetes. High blood sugar and its associated symptoms (frequent urination, thirst) do not usually occur until more than 90 percent of the cells that make insulin have been destroyed.

Type 1 diabetes can develop in people with a family history of type 1 diabetes, but it also develops in people with no family history of diabetes. In either case, people who develop diabetes have one or more genes that make them susceptible to the disease. Environmental factors, such as exposure to certain viruses and foods early in life, might trigger the autoimmune response.

Close relatives (children, siblings) of a person with type 1 diabetes have an increased risk of developing type 1 diabetes, compared to a person with no family history (5 to 6 percent versus 0.4 percent, respectively).

Genetic testing can help to determine if a family member is at risk of developing diabetes. However, these tests are currently only available to people who participate in a clinical research trial.

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## TYPE 1 DIABETES DIAGNOSIS

The diagnosis of diabetes is based on your symptoms and blood tests.

**Symptoms** — Most people with type 1 diabetes have symptoms of high blood sugar levels (hyperglycemia). This includes:

- Excessive thirst
- Feeling tired
- Needing to urinate frequently
- Losing weight
- Blurred vision

Less commonly, there are symptoms of a problem called diabetic ketoacidosis (DKA). People with DKA have symptoms of high blood sugar (see above), as well as nausea and vomiting, belly pain, breathing rapidly, feeling sluggish, having trouble paying attention, and sometimes coma. DKA is a medical emergency and must be treated promptly.

**Blood tests** — Several blood tests are used to measure blood sugar levels. Having a higher than normal blood sugar, as well as the symptoms described above, usually means that you have diabetes.

