

# Diabetes treated with insulin and hypoglycemia: Understanding low blood sugar and its impact on health

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## Description

Hypoglycemia, also known as low blood sugar, is a condition characterized by abnormally low levels of glucose in the blood. Glucose is the primary source of energy for the body's cells, and maintaining stable blood sugar levels is essential for overall health and well-being. Hypoglycemia can occur in individuals with diabetes, as well as those without diabetes, and it requires prompt recognition and management to prevent potentially severe complications.

Hypoglycemia occurs when the level of glucose in the blood drops below the normal range, typically defined as a blood sugar level below 70 mg/dL (3.9 mmol/L). Glucose is obtained from the food and is essential for providing energy to the body's organs and tissues. It is regulated by hormones, primarily insulin and glucagon, produced by the pancreas.

In people with diabetes, the balance between insulin and glucagon is disrupted, leading to fluctuations in blood sugar levels. Excess insulin or insufficient food intake can cause hypoglycemia in individuals with diabetes who take insulin or specific diabetes medications.

### ■ Causes of hypoglycemia

**Diabetes medications:** Insulin and certain oral diabetes medications, such as sulfonylureas and meglitinides, can lower blood sugar levels. Proper dosing and timing of these medications are crucial to avoid hypoglycemia.

**Delayed or skipped meals:** Going for long periods without eating or missing meals can cause a drop in blood sugar levels, especially in individuals with diabetes.

**Excessive physical activity:** Engaging in intense exercise or physical activity without adjusting food intake or medication can lead to hypoglycemia.

**Alcohol consumption:** Drinking alcohol can interfere with the liver's ability to release glucose into the bloodstream, contributing to hypoglycemia.

**Certain medical conditions:** Conditions such as liver or kidney disorders can impair the body's ability to regulate blood sugar levels, leading to hypoglycemia.

### ■ Symptoms of hypoglycemia

The symptoms of hypoglycemia can vary depending on the severity and how rapidly blood sugar levels drop. Common symptoms include:

- Shakiness or Tremors
- Sweating
- Rapid heartbeat
- Confusion or difficulty concentrating
- Irritability or mood changes
- Dizziness or lightheadedness
- Weakness or fatigue

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- Headache
- Blurred vision

■ **Diagnosis and risk factors**

Diagnosing hypoglycemia involves assessing symptoms, reviewing medical history, and conducting blood sugar tests. A healthcare professional may perform a fasting blood sugar test or an oral glucose tolerance test to evaluate blood sugar levels and determine if they are within the normal range.

Certain factors increase the risk of developing hypoglycemia, including

**Diabetes:** People with type 1 diabetes or advanced type 2 diabetes on insulin or specific medications are more susceptible to hypoglycemia.

**Intense physical activity:** Athletes or individuals engaging in strenuous exercise may experience drops in blood sugar levels.

**Alcohol abuse:** Excessive alcohol consumption can disrupt glucose production and lead to hypoglycemia.

**Medications:** Certain medications, such as those used to treat malaria or certain heart conditions, can cause hypoglycemia as a side effect.

■ **Management and treatment**

The management of hypoglycemia depends on

its severity and the individual's overall health. Immediate treatment involves consuming fast-acting carbohydrates to raise blood sugar levels rapidly. Once the blood sugar returns to a normal range, it is essential to follow up with a more substantial meal or snack to sustain blood sugar levels. For individuals with diabetes, preventing hypoglycemia is crucial, and they should do following activities.

Monitor blood sugar levels regularly, especially before and after meals and physical activity.

Plan meals and snacks to maintain stable blood sugar levels throughout the day.

Adjust medication dosages as needed, under the guidance of a healthcare provider.

Be prepared for episodes of hypoglycemia by carrying fast-acting carbohydrates at all times.

Hypoglycemia is a critical health concern that can affect individuals with diabetes as well as those without diabetes. Early recognition and prompt management are essential to prevent complications and maintain stable blood sugar levels. By adopting a healthy lifestyle, following medical advice, and seeking timely medical care, individuals can effectively manage their blood sugar levels and prevent episodes of hypoglycemia.