

## Symptoms of Diabetes Mellitus

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**Abstract:** This article discusses the causes, consequences, and risk factors of diabetes mellitus. It presents opinions on the prevention, diagnosis, and treatment of diabetes mellitus, as well as methods to prevent its spread. The etiology and pathogenesis of the disease are analyzed, and different types and stages of diabetes are described. The article also outlines the clinical course, symptoms, and possible complications, along with information on methods of prevention and recovery.

**Keywords:** hyperglycemia, hypoglycemia, gestational diabetes, polydipsia, polyuria.

### INTRODUCTION

Diabetes mellitus is a disorder of metabolic processes caused by decreased insulin levels and increased blood glucose concentration. It is a chronic disease that often tends to progress if not controlled properly. In severe cases, it can lead to life-threatening conditions such as hyperglycemic and hypoglycemic coma.

The disease occurs due to insulin deficiency, and disturbances in protein, carbohydrate, and lipid metabolism are characteristic of it. Insulin, which regulates carbohydrate metabolism, ensures the synthesis, breakdown, and utilization of glycogen in the liver. In diabetic patients, the pancreas produces an insufficient amount of insulin, or the body's cells become resistant to insulin. This results in hyperglycemia — a condition of elevated blood glucose levels.



### SYMPTOMS OF DIABETES MELLITUS

Type 1 diabetes develops acutely, while type 2 diabetes develops gradually. There are also asymptomatic (latent) cases. Both types have certain distinctive and common clinical signs, including:

Persistent dry mouth and excessive thirst (patients may drink 7–10 liters of water per day);

Increased appetite (polyphagia);

Frequent urination (polyuria);

Itching of the skin and mucous membranes, formation of pustular lesions;

Severe fatigue, insomnia, decreased mental and physical activity;

Blurred vision;

Convulsions.

## FORMS OF DIABETES

By severity, diabetes mellitus may be classified as mild, moderate, or severe.

**Type 1 Diabetes (Insulin-Dependent):** A chronic condition in which the pancreas produces little or no insulin.

**Type 2 Diabetes (Insulin Resistance):** The body does not properly respond to insulin, and over time, the pancreas cannot produce enough to maintain normal blood glucose.

**Gestational Diabetes:** A temporary form of diabetes that occurs during pregnancy and usually resolves after childbirth.

Depending on glucose levels, diabetes may be divided into:

Compensated diabetes: normal glucose control (fasting < 4 mmol/L, postprandial < 9 mmol/L).

Subcompensated diabetes: moderate hyperglycemia (8–11 mmol/L).

Decompensated diabetes: severe hyperglycemia (>11 mmol/L) with clear clinical signs.

## DIAGNOSIS

Diagnosis is made by laboratory tests such as:

Fasting blood glucose;

Oral Glucose Tolerance Test (OGTT);

Glycated hemoglobin (HbA1c) — reflects average blood glucose over the last 2–3 months.



**ETIOLOGICAL FACTORS**

Factors influencing disease development include:

Pheochromocytoma (adrenal tumor causing hormonal imbalance);

Adrenal hyperactivity (hypercorticism);

Hyperthyroidism;

Liver cirrhosis;

Carbohydrate intolerance;

Temporary hyperglycemia.

**PREVENTION**

Maintaining healthy body weight and preventing obesity;

Regular physical activity;

Healthy diet low in fats and sugars;

Routine screening for early diagnosis.

**TREATMENT**

Currently, treatment is mostly symptomatic and aimed at compensating carbohydrate metabolism and preventing complications.

Main approaches:

1. Insulin therapy — to replace or supplement insulin deficiency.
2. Diet therapy — balanced nutrition with limited simple carbohydrates.
3. Patient education — understanding hypoglycemia/hyperglycemia management.
4. Physical activity — maintaining cardiovascular and metabolic health.

Types of insulin used:

1. Rapid-acting (effective in 15 minutes, lasts 3–4 hours)
2. Short-acting (starts in 30 minutes, lasts 6–8 hours)
3. Intermediate-acting (starts in 1–2 hours, lasts 12–18 hours)
4. Long-acting (starts in several hours, lasts up to 24 hours)

**DIETOTHERAPY**

Diet is essential in diabetes treatment. In type 2 diabetes, early stages may be managed with diet alone. Type 1 diabetes always requires strict dietary adherence.

Meals should be balanced in carbohydrates, proteins, and fats. Easily digestible carbohydrates should be eliminated except in hypoglycemic emergencies.

**COMPLICATIONS**

Acute complications include:

Diabetic ketoacidosis: accumulation of ketone bodies, leading to coma.

Hypoglycemia: abnormally low blood sugar due to excess medication or missed meals.

Hyperosmolar coma: occurs in elderly patients, linked with severe dehydration.

Lactic acidosis: accumulation of lactic acid, leading to respiratory and circulatory collapse.

## CONCLUSION

Diabetes mellitus is a globally prevalent chronic disease with diverse types, risk factors, and complications. Proper management and early intervention can prevent serious outcomes. Combating diabetes is a vital task not only for medicine but also for public health, education, and policy.

In the future, advances in genetics, cell therapy, and microbiota research may improve understanding and treatment of diabetes.

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