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Ministry of Health

Diabetes

Definition of Glucose:

Glucose is one of the simplest forms of sugar, and it serves as an energy source for the body's cells.

Definition of Insulin:

Insulin is a hormone that is secreted by the beta cells of the pancreas, and it helps unlock the body's cells, so that sugar can enter the cell and be used for energy.

Definition of Diabetes:

Diabetes is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces, which may cause blood sugar levels to rise or drop beyond the normal range.

Prediabetes:

Prediabetes is a health condition where blood sugar levels are higher than normal, but still not high enough to be diagnosed as type 2 diabetes. Early detection and treatment of prediabetes can help restore blood sugar levels back to normal, and prevent type 2 diabetes.

Types of Diabetes:

- **Type 1 Diabetes**

Type 1 diabetes is a chronic condition that causes the insulin producing beta cells in the pancreas to be destroyed, preventing the body from being able to produce enough insulin. For this reason, type 1 diabetes patients will be dependent on external sources of insulin throughout their lifetime.

- **Type 2 Diabetes:**

Type 2 diabetes is a chronic condition where the body either resists the effects of insulin or doesn't produce enough insulin to maintain normal blood sugar levels.

- **Gestational Diabetes:**

Gestational diabetes is any change in blood sugar levels that is diagnosed for the first time during pregnancy, regardless if the condition continues after childbirth or not.

- **Other Types of Diabetes:**

Some people develop rare types of diabetes due to several factors. These include different types of monogenic diabetes, cystic fibrosis-related diabetes, and diabetes caused by certain medications (such as: cortisone compounds and certain AIDS medications). Diabetes can also be caused by certain rare syndromes (such as: Down syndrome, Klinefelter syndrome, and Turner syndrome)

Identifying which type of diabetes a patient has helps in determining the best possible treatment option. However, it has become more difficult to determine which type of diabetes some patients have developed, especially since the way types of diabetes used to be classified in the past

(where type 1 diabetes was said to only affect children and type 2 diabetes only affected adults) is not considered very accurate nowadays.

Diabetes Diagnosis:

- **Random blood sugar test:**

A random blood sugar test checks your blood sugar at a random time of the day. A level of 200 mg/dl or higher is a sign that you have diabetes.

- **Laboratory tests:**

There are multiple laboratory tests that are used to diagnose diabetes at hospitals. These tests are often repeated the following day to confirm the diagnosis. Some of these tests are:

- **Fasting blood sugar test:**

A blood sample will be taken after 8 hours of fasting, often in the morning before eating breakfast.

- **Glucose tolerance test:**

For this test, blood sugar levels are tested before drinking a certain sugary liquid, and then 2 hours after drinking it.

- **Glycated hemoglobin (A1C) test:**

This blood test, which doesn't require fasting, indicates your average blood sugar level for the past two to three months. It is used to diagnose new cases or to monitor chronic cases of diabetes.

Blood sugar levels:

	Normal blood sugar levels	Prediabetes blood sugar levels:	Diabetes blood sugar levels:
Fasting blood sugar test	Less than 100 mg/dL	100-125 mg/dL	Less than 125 mg/dL
Two-hour postprandial blood sugar test	Less than 140 mg/dL	140-199 mg/dL	200 mg/dL or higher
HbA1c test (average blood sugar level)	Less than 5.7	5.7 – 6.4	6.5 or higher

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	Hyperglycemia (High Blood Sugar)	Hypoglycemia (Low Blood Sugar)
Causes	Blood sugar levels rise in the body when the pancreas is unable to produce enough insulin or because the body is resistant to the effects of insulin. This happens due to the following reasons: • Skipping or not taking medication or insulin dosages o time. • Consuming too much carbohydrates. • Psychological stress and anxiety (such as preoperative anxiety). • Infections.	Hypoglycemia occurs when blood sugar levels fall too low. There are several reasons why this may happen, the most common reason is due to certain drugs that are known to lower blood sugar levels. Some of the factors that may also cause hypoglycemic episodes include: • Taking too much insulin or diabetes medication. • Postponing or skipping meals. • Increasing exercise or physical activity. • Alcohol consumption.
Symptoms	The three most common symptoms are: • Frequent urination. • Increased thirst. • Extreme hunger. High blood sugar may result in other symptoms, such as: • Fatigue and exhaustion. • Weight loss. • Blurred vision.	The three most common symptoms are: • Sweating. • Fatigue. • Dizziness. Low blood sugar may result in other symptoms, such as: • Pale skin. • Weakness • Hunger • Rapid heartbeat. • Blurred vision. • Anxiety.
Groups most at-risk of developing this condition		Anyone can suffer from low blood sugar; however, sever cases of low blood sugar often affect those who take the following medications: • Insulin. • Drugs that stimulate insulin secretion (such as: Sulfonylurea and others).
Complications	If blood sugar level rises high enough or for a prolonged period of time, it can lead to serious complications, such as: • Diabetic ketoacidosis. • Hyperosmolar hyperglycemic state.	Seizure, loss of consciousness, and, in extreme cases, a diabetic coma.

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Emergency treatment	• Ensure that the patient drinks plenty of fluids. • The patient must lie down and get enough rest • If the patient usually takes insulin, then the correct dose must be taken. • Immediate medical attention is required if there are ketones in the urine. • If high blood sugar is caused by an inflammation, then the patient may need an antibiotic.	**If the patient is conscious or semiconscious follow the "15-15 rule":** • The rule is to get the patient to drink 15 grams of a liquid containing sugar (such as: sugar water or apple juice). • After 15 minutes, check the patient's blood sugar levels. • If blood sugar levels are still low, then give the patient another 15 grams of a liquid containing sugar. • Once the blood sugar levels are back to normal, it's important for the patient to have a light snack to help stabilize blood sugar levels (such as: a glass of milk or a slice of bread). **If the patient is unconscious:** A glucagon injection must be administered intramuscularly as soon as possible. Do not give food or drink to someone who is unconscious to avoid choking, and immediately take them to the nearest hospital.

Misconceptions:

- **It is possible for type 1 diabetics to manage their condition with lifestyle changes and a healthy diet alone.**
  Fact: A person with type 1 diabetes will need to take insulin for the rest of their life.

- **Gestational diabetes is a temporary form of diabetes that occurs during pregnancy and it does not develop into a chronic condition later on.**
  Fact: Studies have shown that gestational diabetes is a risk factor for type 2 diabetes.

- **Both type 1 and type 2 diabetes can be prevented.**
  Fact: Several studies have been conducted on type 1 diabetes prevention, but all these studies have failed to prevent it. On the other hand, type 2 diabetes can be prevented by making lifestyle changes, maintaining a healthy diet, and losing weight.

- **Diabetics do not require regular follow-ups if their blood sugar levels are stable.**
  Fact: All diabetics should undergo routine follow-up examinations to monitor their blood pressure, nerves, eyes, and average blood sugar levels.

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- **Diabetes patients do not need to measure their blood sugar at home.**

  Fact: Studies have shown that when patients measure their blood sugar more frequently, they become more efficient in controlling their blood sugar levels, and therefore, limit the risk of developing diabetes complications.

- **It is not advisable for a doctor to recommend insulin treatment immediately after diagnosing a patient with type 2 diabetes,**

  Fact: In some cases, the doctor may find it necessary for type 2 diabetics to start insulin treatment immediately if their blood sugar levels are dangerously high.

- **Diabetes prevents the patient from leading a normal life.**

  Fact: Diabetes does not prevent a person from leading a normal life. In fact, it can be controlled, and the patient can live a healthy, happy life.