




# Blood Glucose Test

**Asst.lec. Zahraa Hasan**

## **What is a blood glucose test?**

**A blood glucose test** measures the amount of glucose, or sugar, in your blood. When you eat carbohydrates, your body converts them into glucose to use as energy. Too much or too little glucose in the blood can be a sign of a serious medical condition.

Doctors often order a blood glucose test to help diagnose a condition called **diabetes**.



High blood glucose levels (**hyperglycemia**) may be a sign of diabetes, a disorder that can cause heart disease, blindness, kidney failure and other complications.

Low blood glucose levels (**hypoglycemia**) can also lead to major health problems, including brain damage, if not treated

# Symptoms of high blood glucose levels include:

- 1- Increased thirst
- 2- More frequent urination
- 3- Blurred vision
- 4- Fatigue
- 5- Wounds that are slow to heal

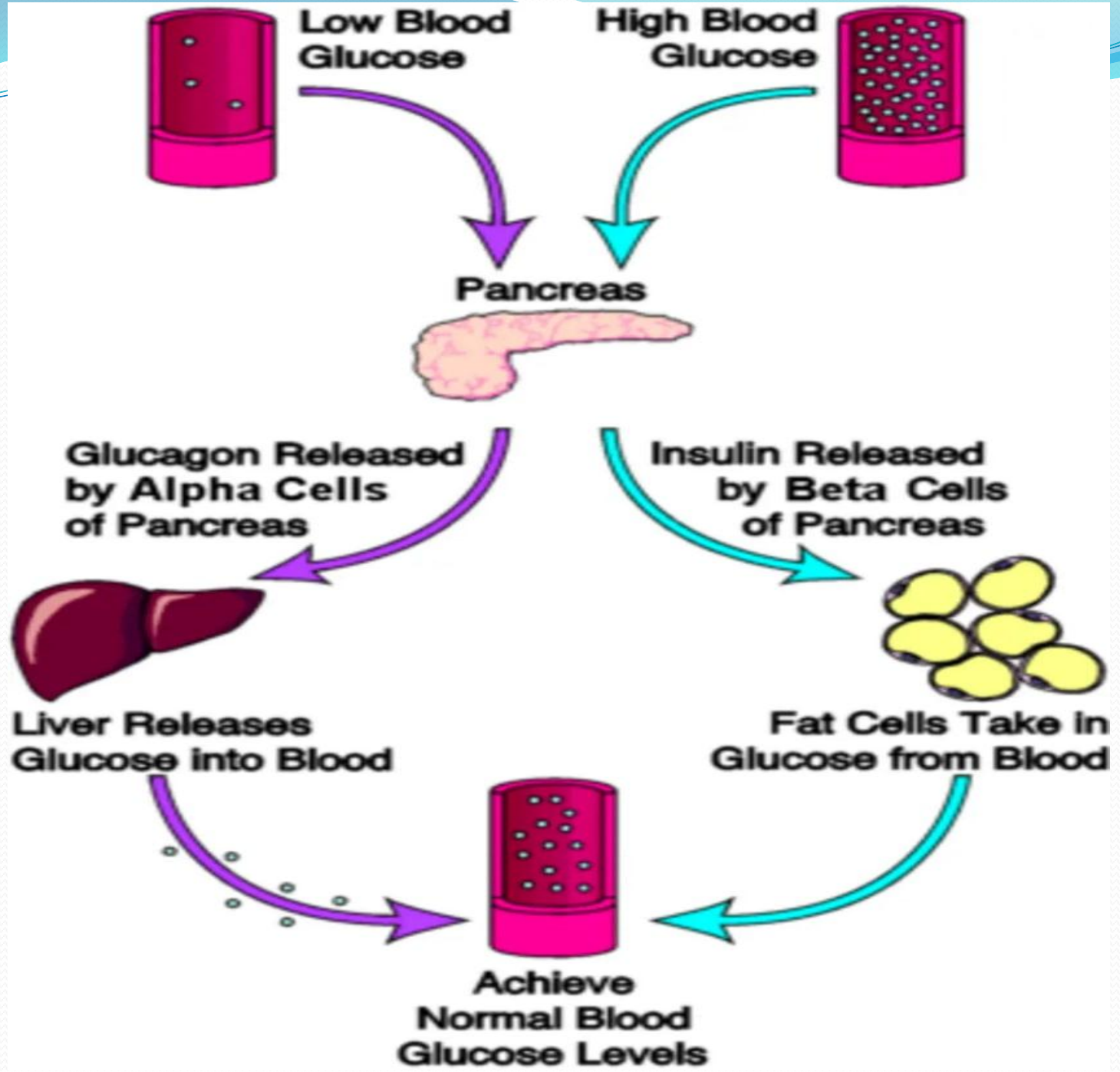
# **Symptoms of low blood glucose levels include:**

- 1- Anxiety
- 2- Sweating
- 3- Trembling
- 4- Hunger
- 5- Confusion

# The hormones that are involved in the regulation of blood glucose

**Insulin:** Stimulates cells to take up glucose from the blood and so lowers blood glucose

**Glucagon:** Stimulates hepatocytes to release glucose into the blood and so raises blood glucose



**Diabetes** is a lifelong condition that causes a person's blood sugar level to become too high.

**There are 2 main types of diabetes:**

**Type 1 diabetes** – where the body's immune system attacks and destroys the cells that produce insulin.

**Type 2 diabetes** – where the body does not produce enough insulin, or the body's cells do not react to insulin.

**During pregnancy**, some women have such high levels of blood glucose that their body is unable to produce enough insulin to absorb it all. This is known as **gestational diabetes**.



## **How to prepare for a blood glucose test:**

Blood glucose tests fall into several categories, including **fasting, random (non-fasting), or post-prandial**. Fasting tests are more commonly used to diagnose diabetes. Before your test, tell your doctor about the medications you're taking, including prescriptions, over-the-counter drugs, and herbal supplements. Certain medications can affect blood glucose levels. Your doctor may ask you to stop taking a particular medication or to change the dosage before your test temporarily.

# Medications that can affect your blood glucose levels include:

- 1- Diuretics
- 2- birth control pills
- 3- hormone therapy
- 4- aspirin
- 5- Lithium
- 6- epinephrine (Adrenalin)
- 7- phenytoin

## **Fasting test preparation**

For a fasting blood glucose test, you can't eat or drink anything except water for 8 hours before your test.

## **Random testing preparation**

Random (non-fasting) blood glucose tests don't require you to not eat or drink before the test.

## **Post-prandial testing preparation**

A test given 2 hours after starting a meal is used to measure postprandial plasma glucose. This test is most often done at home when you have diabetes. You must do this test 2 hours after you start eating a meal.

## **Glycated hemoglobin (A1C )Test**

The A1C test measures your average blood sugar level over the past 2 or 3 months. An A1C below 5.7% is normal, and 6.5% or higher indicates you have diabetes.

# Procedure

To measure blood glucose levels, a doctor will collect a sample of blood from your vein using a small needle. If you already have diabetes, you can perform a blood glucose test at home using a device that quickly pricks your finger in order to collect a drop of blood.

# How to Use a Glucometer



1. Prepare your supplies and clean your hands.



2. Turn on glucometer and insert test strip.



3. Prick your finger and squeeze a drop of blood.



4. Place the drop to the edge of the test strip



5. Wipe away any remaining blood.

## **Normal range:**

### **Fasting blood sugar test**

Normal for person without diabetes: 70–99 mg/dl  
,for someone with diabetes: 80–130 mg/dl.

### **Post-prandial test**

Normal for person without diabetes: Less than 140 mg/dl ,for someone with diabetes: Less than 180 mg/dl.

### **Random blood sugar test**

Normal for person without diabetes: 70–140 mg/dl, for someone with diabetes: 140-200 mg/dl.



Thank you