

GLUCOSE

Glucose is a simple sugar, also known as a monosaccharide, and it is the primary source of energy for living organisms. Chemically, it is a carbohydrate with the molecular formula $C_6H_{12}O_6$. Glucose is produced through photosynthesis in plants and is commonly found in fruits, vegetables, and honey.

In the human body, glucose is a crucial source of energy for cellular respiration and is transported through the bloodstream to cells where it is metabolized to produce ATP (adenosine triphosphate), the energy currency of cells. Additionally, glucose serves as a precursor for the synthesis of other important molecules, including starch, glycogen, and structural components of cells.

Low level Glucose:

It typically refers to hypoglycemia, which is a medical condition characterized by abnormally low levels of glucose (sugar) in the blood. This condition can occur in individuals with diabetes who take too much insulin or certain other medications, causing excess glucose uptake by cells and resulting in a decrease in blood sugar levels.

- Symptoms of low blood sugar include shakiness, sweating, confusion, dizziness, weakness, and in severe cases, loss of consciousness or seizures.
- Treatment for low blood sugar usually involves consuming glucose or simple carbohydrates to quickly raise blood sugar levels. If left untreated, severe hypoglycemia can be life-threatening.

High level Glucose:

It known as hyperglycemia, happens when there's too much sugar in the blood. It's common in people with diabetes when their bodies struggle to control blood sugar. Causes include not enough insulin, too many carbs, stress, illness, or certain medicines.

- Symptoms include thirst, frequent urination, tiredness, blurred vision, and slow wound healing. If not treated, it can lead to serious complications like diabetic ketoacidosis or hyperosmolar hyperglycemic state.
- Treatment involves adjusting diet, exercise, and medication, often with insulin, to bring blood sugar back to normal. Regular blood sugar monitoring and seeking medical help for persistent hyperglycemia symptoms are important for people with diabetes.