

Our body's unlimited source of energy: Glucose

Which quality of glucose, which provides energy for our body like the fuel that runs a machine, make it easily dissolve in water?

Why is it of vital importance that glucose can dissolve in almost every fluid?

How are excess amounts of glucose balanced in the body?

What sort of changes occur in the body if there is not enough glucose ?

How does diabetes form?

Glucose, which is the basic source of food for all living beings, is a very important molecule. By means of glucose, which Allah created as an instrument, we can move our arms, work our jaw muscles to eat food and we can walk.

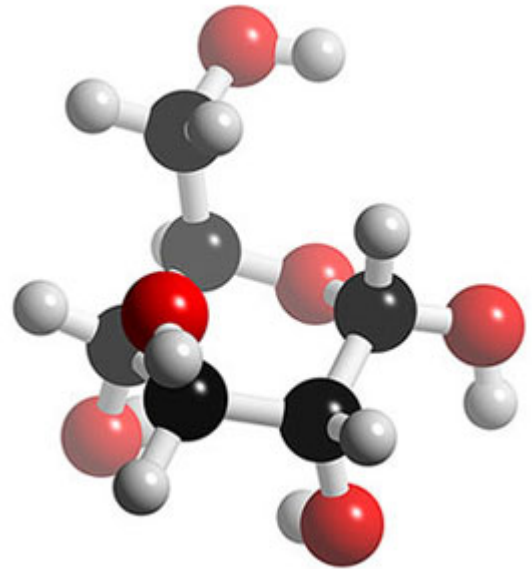
The glucose molecule, which has six carbon, twelve hydrogen and six oxygen molecules, has a hexagonal shape because of hydrogen atoms. These six oxygen molecules found in its composition gives glucose many important qualities. For example, by means of oxygen molecules, glucose can easily dissolve in water. The reason for this is that this molecule can form strong hydrogen bonds with water molecules, because of the oxygen atoms. Glucose can dissolve in almost any type of fluid due to this molecule that allows for solubility in water. Glucose is the most important nutrient source for the cells, and it is transferred to cells via blood; thus it has to be able to dissolve in fluid.

How does glucose move in the body?

Glucose has common characteristics with hexane, which has a similar molecular structure to glucose. Hexane is similar to glucose as a fuel; however, hexane does not carry any oxygen atoms and therefore when it burns, it causes many new and strong carbon-oxygen bonds. This situation prevents hexane from dissolving in water. Therefore, hexane cannot be carried to the cells by the blood. Under normal conditions, glucose is less efficient than hexane, but it is of vital importance for human beings, as it can be transferred via water.

When glucose molecules enter into a solution, it can turn its energy into fuel for the metabolism. Therefore glucose is the essential source of energy for living cells. Bigger molecules, for example complex sugars and starch, are scaled down in the form of glucose molecules in order to be easily burned and taken to the cells. In this way, glucose takes names such as blood sugar, grape sugar, or starch sugar depending on the metabolism it enters.

How are glucose molecules that emerge during the digestion process balanced?



70% of the food we consume supplies carbohydrate for us. Carbohydrates, the digestion of which begins in the mouth, are met with enzymes, which break down carbohydrates inside the saliva. The digestion of these molecules, which are partially broken down, ends in the small intestine. Glucose molecules that come out as a result of this break down causes the blood pressure to increase. However, blood pressure is balanced thanks to the enzymes that interfere with glucose molecules. In short, a molecule very important for the body is balanced by another molecule created specially by Almighty Allah's Will.

When there is excess glucose in the body, these excess glucose molecules are stored after being turned into another shape called "glycogen" with the help of an enzyme. The enzyme, which is responsible for turning glucose into glycogen is called "glucokinase." This enzyme is produced by the liver, and this production is under the control of the "insulin" hormone secreted by the pancreas. The glycogen produced steps in when there is need for energy in the body and becomes ready for use.

The perfect distribution of work in our body has existed since man was first created

In a factory, there are personnel who deal with production, who transport products to places, who control them, who detect surpluses and who use these surplus products for other purposes. Every part of the production process is controlled by chosen units. A detailed control system is carried out to avoid any mistakes. In every department, scores of specialists are employed. Despite this, a perfectly flawless order cannot be established, and mistakes do occur quite often.



This flawless system in the human body works just like a factory and it never makes a mistake except by Allah's Will. Each and every cell and molecule knows their tasks and carries them out in full. From amino acids, which are the building blocks of life, to atoms, from molecules to proteins, all things are under Allah's Might. There is no doubt that neither the molecules in the cell, nor the other structures that move with it have any intelligence, knowledge, talent or specialized

training. All these processes and productions have not come into existence over time, and this perfect system was created just the way it is now since the moment of our birth. Allah has created this perfect distribution of work throughout thousands of years, even when science was unaware of this, without any flaw, and every molecule has carried out its function in every human being in the most perfect way. This superior creation of Almighty Allah is revealed in the Qur'an:

I seek refuge in Allah from the accursed satan-

"We created man from the purest kind of clay; then made him a drop in a secure receptacle; then formed the drop into a clot and formed the clot into a lump and formed the lump into bones and clothed the bones in flesh; and then brought him into being as another creature. Blessed be Allah, the Best of Creators!" (Surat al-Muminun, 12-14)

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